e Itliming

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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. 2166.-Vol. XLVII.

LONDON, SATURDAY, FEBRUARY 24, 1877.

PRICE SIXPENCE. SUPPLEMENT.

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ss transacted in all descriptions of MINING Stocks and Shares (British gn), Consols, Banks, Bonds (Foreign and Colonial), Railways, Miscel Insurance, Assurance, Telegraph, Shipping, Canal, Gas, Water, and

hards.
ha

| Bankers : City Bank, London; South Oornwall Sank, St. Austell;
| CIAL DEALINGS in the following, or part;—|
| gerdine, 25-35. | 15 East Caradon. |
| 25 Exchequer, 21 18s. 9d. |
| 26 Eventralt, £834. |
| 27 Eventruthal, 12s. 6d. |
| 28 Eventruthal, 21 2s. 6d. |
| 29 Carys Mount., 11s. |
| 20 Parys Mount., 11s. |
| 20 Parys Mount., 11s. |
| 20 Parys Mount., 12s. 6d. |
| 20 Parys Mount., 1s. |
| 20 Parys Mount., 12s. 6d. |
| 20 Parys Mount., 12s. 6d. | ILL DEALINGS in the gentine, 2634; seriaunant; 11s. ampfylde, 9s. states, £1 6s. edd Unit., 10s. 6d. thedrai, £1 2s. 6d. heage, £5. ontales, 9s. ambmartin, 8s. erwent, £234. on Pedro, 10s. st Van, £7%.

* Shares sold for forward delivery (one, two, or three months) on deposit of 20 per cent.

SPECIAL BUSINESS in POSITIVE ASSURANCE SHARES.
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OTTON SPINNING SHARES .- BUSINESS in all OLDHAM SHARES, and in those of other DISTRICTS.

| Name of Mill | | L | | our di | viden nt. | Closing quotation February 23. Buyers, Sellers | | | | | | |
|--------------|-----|-----|-----|--------|--------------|--|-----|----|-----|------|-----|-------|
| Central | *** | *** | *** | | 30, | 26, | 30, | 10 | 4 | 34 | , | £ 314 |
| Greenacres | 980 | *** | | *** | 30, | 30. | 20. | 5 | *** | 43/ | *** | 814 |
| Green Lane | *** | *** | *** | *** | 30, | 25, | 30, | 25 | *** | 78 | *** | 80 |
| Oldham Twist | | *** | *** | | 5, | 82, | 26, | 12 | *** | 2514 | *** | 041/ |
| Royton | | *** | *** | *** | 30, | 20, | 10, | 10 | *** | 234 | *** | |
| Shaw | *** | *** | *** | | 121/2 | | 16, | 10 | *** | 274 | | 334 |
| Star | *** | *** | | | | | 20, | 8 | *** | 234 | *** | 314 |
| Windsor JAME | *** | | 100 | | 30, | 26, | 20, | 10 | LON | 3 | *** | 31/4 |

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IM PORTANT.

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| | Day or or o | | | my com. | | CHACK M. |
|---------------------|-------------|--------|---------------------------|---------|-----|-----------|
| Almada | 7s. 6d | 8s.6d. | New Zealand Kapanga. | £ 23/ | 4 | 3 |
| Bodidris | £ 1 | 2 11/ | Parys Mountain | 10s. | *** | 11s |
| Derwent | 214 | 3 | Pennerley | 158. | | 174. |
| Devon Great Consols | 4 | 414 | Penstruthal | 11s. | *** | 13s. |
| Don Pedro | | | Plynlimmon | 5. | *** | 6s. |
| Eberhardt | | 85% | Prince of Wales (call p.) | 48. | | |
| East Caradon | 1 | 114 | Richmond | 614 | | |
| East Van | 7 | 716 | Roman Gravels | 1344 | | 14 |
| Exchequer Gold | 174 | | Rookhope | 178. | | |
| Flagstaff | 314 | | Santa Barbara | 236 | | |
| Frontino | 116 | | San Pedro | | | 1 |
| Glenroy | 114 | 134 | South Condurrow | 4'" | *** | 614 |
| Glyn | | | So. Roman Gravels | 104. | 1 | 2s. 6d. |
| Great Laxey | | 21 | Tankerville | | *** | 814 |
| Javali | | | Tincroft | | *** | 20 |
| Last Chance | 34 | 34 | Van | | | 38 |
| Ladywell | | 114 | Van Consols | | | |
| Leadhills | 6 | | West Assheton | | | 17 |
| Marke Valley | | | West Chiverton | | *** | 1934 |
| North Laxey | | | | 114 | | |
| | | | Wh. Grenville | | | |
| New Quebrada | 314 | 334 | WIL. Grenville | 10s. | *** | . ss. ou. |

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BPECLAL BUSINESS in the following:—
Assheton, 31s.

Aberdaunant, 12s. 6d.
Bedford United, 19s.
Belstone, 21s.
Cathedral, 21s.
Combmartin.
Derwent, 224.
North Lavar, 15s. 6d.
Marke Valley, 20s.
West Godolphin.

Combmartin.
Derwent, £2¾.
Devon Consols, £4½.
East Van, £7½.
Grogwinion, £5¾.
Great Laxey, £21.
Glenroy, 30s.

Argentine, £5½. Cedar Creek, 16s. Chontales, 8s. 3d. Condes of Chili, £4¼. Don Pedro, 10s. Eberhardt, £8¾. Exchequer, 36s. 6d.

cuter SHARES,
the following:—
Glyn, 43s. 6d.
Gunnislake (off. wntd.)
Hingston Down, 13s 9d.
Leadhills, £63s.
Lianrwst, 41s. 6d.
Marke Valley, 20s.
North Larey, 15s. 6d.
Pennerley, 15s. 6d.
Penstruthal, 12s.
Pandora.
Parw Pandora. Parys Mountain, 10s. Prince of Wales, 5s. Flagstaff, £3 7s. 6d. Frontino, 31s. Gold Run, 12s. I. X. L., 13s. Javaii, 9s. 6d. Last Chance, 11s. New Zealand Kap. £3½

Rockhope, 19s.
Roman Gravels, £13%.
Tankerville, £8%.
Talybont.
Trebeigh Consols.
Van Consols.
West Godolphin.
W. Tankerville, 55s. 6d.
W. Wye Valley, £3%.
Wheal Grenville (call paid), 16s. paid), 16s. Phosphate Sewage.

Pestarens, 4s.
Port Phillip, 9s. 6d.
Richmond, £6½.
South Aurora, 6s. 9d.
Sweetland Creek, 5s. 3d. Tecoma, 12s. Yorke Peninsula.

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BUSINESS in the following:—
40 Chapel House, £3, 25 Edinburgh Tram.
50 Cardiff, £1%. 60 Eberhardt.
61 Ceylon, £1½. 25 Nart-y Glo, £20½. 1
63 Don Pedro, 108. 25 Nart-y Glo, £20½. 20 Tharsis Sulphur, £20. 20 Miner's Safe, £10½. 60 New. Land, £½. 50 Pennerley, 158.

BUSINESS in the following:

40 Chapel House, 23, 25 Edinburgh Tram.

50 Cardiff, £1%.

50 Eberhardt.

50 Edonburgh Tram.

50 Edonburgh Tram.

50 Edonburgh Tram.

40 Pat. Gunpowder, £1.

40 Pat. Gunpowder, £1.

50 Don Pedro, 10s.

50 New Bharlsone, £5.

50 Tharsis Sulphur, £20.

50 New. Land, £½.

50 Pennerley, 15s.

MINING.—Eberhardt, Richmond, and Flagstaff continue to absorb a large share of attention, and for some time past have paid handsomely when properly managed. The most promising Progressive Mines appear to be Pandora, Pennant, Rockhope, Parys Mountain, and North Laxey.

Further particulars of Feedmand R. Kerk, Stockbroker, 5, Birchin-lane, E.C.

GROGWINION LEAD MINE (LIMITED).

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WYE VALLEY AND WEST WYE VALLEY LEAD MINES. The shares of these companies should be bought. The prospects have recently improved very much, and good discoveries have been made.

BROKERS OR DEALERS HAVING SHARES FOR SALE in either GROGWINION, WYE VALLEY, or WEST WYE VAL LEY MINES, can FIND IMMEDIATE PURCHASERS on application to-

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Mr. THOMPSON strongly recommends the purchase of the shares of the CHAPEL HOUSE COLLIERY COMPANY (Limited) for investment. This company, otwithstanding the stagnation in trade, clears a profit of 2s. per ton on its coal, and when the new works are completed he present handsome returns will be much augmented.

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E. S I M P S O N, STOCK AND SHARE DEALER,

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8 ELL the FOLLOWING SHARES, free of commission:

100 Aberdauuant, 12a. 3d. 15 Fortuna, 2594.

50 Argentine, 25 5a. 9d.

50 Flagstinff, 23 18s. 9d.

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from their firm will be founded only on well-authenticated facts, and may, therefore, be relied upon. fore, be relied upon.
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executed on receipt.

BODIDRIS LEAD MINE.—Shares now in demand at 1 to 14. The prospects of this undertaking are most encouraging, and the mine, although now only sunk to a shallow depth, bids fair to become of equal importance to its neighbour, the celebrated Minera, and other well-known rich lead mines in the same district. There is every indication that as development progresses, and greater depth is attained, the lodes already opened upon will largely increase in their yield of ore. Further particulars may be had on application to Messrs. Emdean, Fisher, and Co.

COTTON SPINNING SHARES.—SPECIAL BUSINESS at the

| 6 | DAT | | | | | | | | | 4 | 2 2 | to £ | 234 |
|---|-----------|-------|-----|------|-----|-----|-------|-----|-----|-----|------|------|------|
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| 0 | Central S | pinni | ng | *** | *** | *** | *** | *** | *** | *** | 216 | | 8 |
| 6 | reenacr | es | *** | *** | *** | *** | | *** | 000 | | 434 | | 43/4 |
| 6 | reen La | ID . | | *** | *** | | *** | *** | *** | | 78 | | 80 |
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| E | NDEAN | , FIE | HE | R, A | ND | CO | ., 3, | LO | MB | ARD | COL | JRT, | E. |
| | | - | | | | | | - | | | | | _ |

NOTICE.—We regret to find that some of our clients have been induced to PURCHASE LLANBWST SHARES, advertised in this Journal at low prices about two months since, and up to the present time have been unable to obtain the delivery of the same. Purchasers of these shares when offered at low prices will do well to see that the transfer is certified by the Secretary of the company, or the certificate attached before they part with their money. ENDEAN, FISHEE, AND CO., 3, LOMBARD COURT, E.C.

FOR SALE, each nett:—50 Bampfylde, 9s.; 25 West Tankerville, £1 13s. 9d.; 50 North Laxey, 17s.; 50 Almada, 7s. 6d. Address, "X. X.," Mr. Barber, 13, Royal Exchange, London, E.C.

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Boyal School of Mines.

LECTURES ON MINERALOGY-No. II. [BY OUR SPECIAL REPORTER.]

"THE GEOGRAPHICAL DISTRIBUTION OF MINERALS IN EUROPE" formed the subject of Prof. SMYTH'S second lecture on Mineralogy. He said it would be a very large but interesting subject to attempt to describe the general distribution of minerals over the surface of the earth; but in the conside ation of the distribution of minerals in Europe there would be found much that was interesting, and also important, to those who have to deal with minerals practically, and with record to the questions which arise between nation and also important, to those who have to deal with ninerals practically, and with regard to the questions which arise between nation and nation. He alinded, in the first place, to several quaint theories which were held in former times concerning this subject, and traces of which may even now be found in the minds of some people. For example, there used to be a very strong impression that the precious metals and gems were to be found only—or, at any rate, much more abundantly—in tropical and sub-tropical countries. This is, perhaps, due somewhat to the fact that in early life we are imbused with terms and notions from eastern writings—the sacred writings, Sinbad's Adventures, Arabian Nights Entertainments, &c.—in which precious metals and gems figure largely. After the discovery of America this notion was exemplified by the fact that for long it was the West In lies and the eastern parts of the tropical —in which precious metals and gems figure largely. After the discovery of America this notion was exemplified by the fact that for long it was the West In lies and the eastern parts of the tropical regions of America to which search for these substances was directed. This belief, however, has been now entirely disproved by the discovery of gold in large quantities in Siberia, and still more recently in the alluvial deposits of California, and in New Zaaland. The old belief was founded upon the facts of the day, the discovery of new facts has rendered it necessary for us to mo lify the belief. Again, with reference to the different varieties of coal; it usel to be held not so very long ago that these were produced by nature only under certain parallels of latitude, belonging, in fact, to temperate regions, and that it was absent both from tropical and polar regions. But even if we limit ourselves to true coal of the curboniferous period this notion is incorrect; for, according to the accounts of Livingstone, there are places in Africa where true coal is found; in America an almost unbroken chain of coal districts in South China, and they are known to exist in some of the islands of the East Indian Archipelago. These facts show that as regards both precious metals and coal we must take a larger view of the distribution than was formerly done.

Gold.—The production of gold in Europe is very small when compared with the production of the American continent, or even when compared with savage districts, like unto that of the king of Dahomey; but the history of that production is very interesting. The lecturer believed there was a time when it might be said there was no country of Europe which did not produce gold, but that time was long since gone by, and there are very few places now

The lecturer believed there was a time when it might be said there was no country of Europe which did not produce gold, but that time was long since gone by, and there are very few places now where it is produced in tangible quantity. Why? For the simple reason that civilisation has existed for a longer period in Europe than in most districts of the world, and consequently the gold which lay about at the surface in sand and gravel and alluvial matter in beds of streams has long since been exhausted and worked out, to such an extent that the small quantities which chemists inform us exist in most river gravels are not worth working. There are signs and records that at one time extansive gold workings were carried on in the courses of the Ruine, Rhone, and Danube, but these have long since ceased to be any importance. Not long ago there was on in the courses of the Roins, Rhone, and Danube, but these have long since ceased to be any importance. Not long ago there was excitement about the discovery of gold in Scotland, but the quantity was so small that of 500 men working there were not more than 10 made ordinary wages, while not half that number made anything over. A similar rush to Wisklow, in Ireland, at the beginning of this century was attended with similar results, and on the Continent just the same set of circumstances are found in several places. In Bohemia from 500 a.p. to 1100 a.p. a large population subsisted mainly by virtue of the gold workings in that district, and the signs of these workings remain along the banks of many of the rivers to this day. In Transylvania, again, at the foot of the and the signs of these workings remain along the banks of many of the rivers to this day. In Transylvania, again, at the foot of the Carpathians, although nearly all the rivers in some parts of their courses carry gold, yet the quantity is so small that at the present day no one except a few colonies of gipsies can find a subsistence by working it. And the same is the case in Turkey; none but the very lowest class of people, who are satisfied with the barest subsistence, can extract a living out of the present gold washings. And yet these are districts which in the days of Alexander the Great produced considerable quantities of gold. In the days of Pliny Spain and Portugal produced considerable quantities of the precious metals, but as the deposits were merely superficial, such energetic working as that bestowed by the Romans and their colonies in a few hundred years exhausted these districts. And speaking generally, it may be said of all European districts that it is only in exceptional places, such as difficultly accessible portions of the beds of streams, or certain places cut off from the actual bed of the stream, that remunerative workings for gold can hope to be carried on. Very different is the case with gold and silver mines, where the gold exists with substances which penetrate deep into the crust the gold exists with substances which penetrate deep into the crust of the earth. We find that in the 13th and early part of the 14th centuries many of these places were working, especially in the Alpine districts, in parts of Austria and South Bavaria, but after the discovery of America many of them could no longer be advartageously carried on. In our own country at the pre-ent time we have one gold mine working, near Dolgelly, in Wales, where for a depth of 20 ims, below the surface tangible quantities of gold are brought up. And the lecturer knew of several similar places where persevering labour might hope to obtain a sufficient return to cover all reasonable expenses. On the Continent gold mines seem to cease till we come to the district south of the Carpathians, called Dacia by the Romans, and now called Romania, where formerly extensive workings were carried on by numerous Roman colonies, and many of the mines are now working. the gold exists with substances which penetrate deep into the crus and many of the mines are now working.

and many of the mines are now working.

Silver.—In the days of the Romans this metal was extracted in large quantities from southern lands, in some cases along with lead ores, in others per so. An ang the districts which produce true silver ores we recken Transylvania, North Hungary, Bohemia, Saxony, Spain (about 60 miles from Madrid, and again in the southeast portion of the Peninsula). Of the silver obtained from lead ores we English have considerable reison to be proud of the wonderful production of this country, partly in consequence of the bountiful manner in which Nature has favoured us, and partly as the result of the bold enterprising character of our fellow-countrymen. The principal Lead producing districts, yielding also silver, are these:—Lanarkshire, in Scotland; Northumberland, Darham Camberland, Yorkshire, and Derbyshire; North and Central Wales, and isolated mines in Cornwall and Devon; South-East of Ireland. These districts together produce a quantity of lead greater than any other country in the world, and, with the exception of Spein, greater than all the other countries of Europe put together. Spain and, with the exception of cries of Europe put together. has been highly favoured in respect of lead, and there are many points on which the Spunish workmen deserve great credit for the great development of the art of mining, and the way in which they have kept themselves to their work, in spite of the troubled condi-tion of the country. The south-east district, not far from the Sierra Nevada, was very productive in the time of the Carthagenians and Revala, was very productive in the time of the cartingoriths and Romans, and perhaps of the Moors also, and is so still. There are also ancient districts in the neighbourhood of Athens where people have lately been miking fortunes by working up the refuse of the old workers; and we must not forget Sardinia, where large quantities have been obtained from mines which were only just touched by the colonists in the time of the Romans. Tin.—To the fact of the occurrence of tin in the remote parts of

Commall we owe the visits of early traders which contributed so much to the civilisation of this country. The tinworks of that county have been continued from those early times down to the present day, although it is necessary in some instances now to go down to a depth of 2000 ft. to extract it. If we refer to the Continent we find that as regards tin there is nothing worth notice in any part of Europe. On the French coast opposite to Cornwall, in the district of Brittany, a little tin is found, but in a recent tour the lecturer could not hear of a single mine working there. In passing the mountains separating Saxony from Bohemia there are a series of metal mines which produce tin, but in so minute a quantity that it makes no impression on the statistics of Europe. In the north-east corner of Portugal is a district very similar in character to that of Cornwall, and there are similar veius with tin, but on a purch careller sevie. much smaller scale.

much smaller scale.

COPPER.—A few years ago we in Great Britain had the command of the copper market, and for nearly 150 years we produced very much more largely than any other country. But the day has passed, and a remarkable change has come over the aspect of things. Our product has fallen off since the first Great Exhibition, partly from the reduction in value of copper from its use being restricted, and partly from the discovery of copper ores in other countries—Australia, Chili, &c. Our principal producing districts—Cornwall and Devon—do not produce one quarter what they used to do, and other districts also produce smaller quantities than formerly. No other country of Europe, however, has thriven by our misfortunes; besides Great Britain there is no great copper producing district in Europe.

IRON AND COAL.-These are more widely distributed than any other substances referred to; passing eastward, for example, we meet with them in Scotland and North England, Belgium, Westphalia, Silesia, and Bohemia. With regard to our iron ores we have in many cases so far exhausted the materials that they cannot practically apply the creation of the control of the c in many cases so far exhausted the materials that they cannot practically be now obtained, in ismuch as the ores can be brought from other districts more cheaply. Large quantities of ore are thus brought from the coast of Franca near Bordeaux, being shipped to the Severn, the Mersey, and the Type. A still greater traffic was set up just before the Carlist war with Bilbao in iron ores. Further supplies are brought to us from Portugal, South Coast of Spain, the celebrated mines of Elba. Large deposits of magnetite in Sweden have long been famous for the production of the finest kinds of steel, and before long great efforts will probably be made to bring supplies of ore to this country from large deposits in the middle of Lapland, where there are mountains of ore, but up to the present time they have been held to be too far remote from shipping ports time they have been held to be too far remote from shipping ports to be obtained.

The lecturer then indicated briefly the great interest of study-The lecturer then indicated briefly the great interest of studying the connection of different races of man with the productions of different parts of the continents; how, for example, our own mining districts are mainly inhabited and worked by Celtic races, representing the original inhabitants of the country, who were gradually forced into the mountainous districts by invading tribes. Much the same thing can be seen in Hungary, where the original inhabitants—the Sclavonic races—now occupy the mountainous and mining districts, having been driven from the lowlands by invading Magyars. And the same fact holds good in Turkey to a great extent, the mountainous regions to the west being peopled by the Sclavs, mingled it may be with a few Albanians. Again, if we stat from our country, which still produces more iron ore than any country of the world, across the Continent, we shall find a very curious diminution in the total quantity of valuable coal and iron one produced, and at the same time a curious—connection with the comparative nution in the total quantity of valuable coal and iron one produced, and at the same time a curious connection with the comparative advancement of the country. The countries which come next in point of pro luction—France and Germany—are the two we should be inclined to put next in the scale of civilisation, but when ones we pass beyond these the figures at once fall almost to nothing. Sweden and Norway are so thinly populated, and have such a lack of capital and fuel, that their total production is small, although some of the products are of high value. As regards Spain, the backwardness of the country is due in a great measure to the uncertainty and convulsions of the Government, together with a lack of steadily applied capital, and in Italy we may see the same to a great extent. and convuisions of the Government, together with a lack of scenary applied capital, and in Italy we may see the same to a great extent. The enormous area of Russia yields but a very small quantity of these products, and if we pass into Turkey the same is true to a great extent; at all events, the localities in which these minerals are remain undeveloped, so that we feel very uncertain whether they are there in any great quantity.

Zectures on Bractical Mining in Germany.

CLAUSTHAL MINING SCHOOL NOTES-No. V.* BY J. CLARK JEFFERSON, A.R.S.M., WH. SC. (Formerly Student at the Royal Bergakademie, Clausthal). [The Author reserves the right of reproduction.] SECTION I.

ON THE MODE OF OCCURRENCE OF THE USEFUL MINERALS OR MINERAL DEPOSITS.

IRREGULAR DEPOSITS-A. Stocke and Stockwerke-These terms. for which we have no equivalents in the English language, are used by the Germans to denote a mineral mass which differs from the neighbouring rock, and has either an irregular, spherical, elliptical, or angular shape, or even somewhat flat or lenticular in form, appearing to have a strike and dip in certain directions, but generally possessing such a considerable thickness towards the middle, and being so irregular in shape, that by them the words "strike" and "dip" find a very difficult application.

According to many writers, and firstamong them Von Cotta, stocke are divided into two classes—(1) liegends stocke; and (2) stehende stocke.

stocke.

1.—As "liegende stocke" are classed all those which in their form and position approximate, or show some resemblance, to a bed or bedded deposit whose greatest dimensions are parallel to the stratification of the surrounding rock. The following examples will serve to illustrate deposits generally considered as "liegende stocke." Ramme sherg, near Goslar: The strata of the mountain Rammelsberg, which are chiefly granuwacke, belong to the Devonian formation, and consist of the following, commencing below, and coming upwards. Clay-slates (Wissenbacher slates), granuwacke, marly, and quartzose slates. The deposit lies in, and is completely surrounded by, the Wissenbacher slate; it has a lenticular shape, the greatest extensions being parallel to the surrounding strata. The principal strike runs E.N.E. by W.S.W., and the dip is about 45° S.S.E., but varies in the hanging branch to between 25° and 70°. The total length of the deposit is about 18'2) ft., and possesses the enormous thickness of 350 feet. At a depth of 400 ft. below the surface the deposit throws out a very thick branch on the hanging side, which wedges out at a further depth of 150 feet. Towards the ends the deposit also appears to wedge out. In 1859, after driving an exploratory cross-cut in the eastern end, at some distance from the principal adit, the deposit was again met with; but here its character was accompletely altered being composed of numerous lends. -As "liegende stocke" are classed all those which in their form ploratory cross cut in the eastern end, at some distance from the principal adit, the deposit was again met with; but here its character was completely altered, being composed of numerous lenticular masses (chiefly of copper pyrites), which were deposited alongside below and over each other. Each lies in, and is completely surrounded by, the Wissenbacher slate—so that there is here no hanging and lying wall to the deposit. The position of these smaller lenticular masses is similar to that of the principal deposit—that is, parallel to the general stratification of the state. The mass consists principally of copper and iron pyrites, and, as subordinate ores, mispickel, guent, and zinc-blende are found. The nature of the ore seems to charge from the hanging to the lying wall. canate ores, mispicket, guent, and zinc-blende are found. The nature of the ore seems to change from the hanging to the lying wail, and also in the direction of the strike, copper and iron pyrites being found mostly next the hanging and galena next the foot wall.

The well-known deposits of magnetic iron at Dannemora, in Sweden, consists of reparate lenticular-shaped masses, of varying size, which rest sometimes against and sometimes over and under each other. Together they form a stock-shaped deposit, whose

each other. Together they form a stock-shaped deposit, whose principal strike and dip is in the same direction as that of the sur-rounding limestone and chloritic slate. The thickness varies be-tween 20 and 60 yards, and her already been followed to a depth of 200 yards. The ore is a finely granular magnetic ironstone, con-

taining also calcspar and brown spar, which sometimes traverse to deposit and veins. Towards the boundaries iron and copper pyrita, zinc-blende, galena, mispickel, &c., oceur in varying quantities.

Stephender, galena, mispickel, &c., oceur in varying quantities, pendent of the surrounding rock. One may consider them as very irregular lodes. As examples of stebende stocke may be cited.—

The Stahlberg, near Misen, which may be characterised as a very wide irregular lode, which traverses the grauwacke slate. It greatest length is about 170 yards; it sends off from three to sit branch deposits, which dip in an opposite direction to that of the principal mass. The width varies from 20 to 30 yards; the off-shost are about 4 yards wide.

The copper deposit at Fahlan, in Sweden, which occurs in him and calc slate. It is a very irregular half-ellipsoidal shaped massive deposit, which grows narrower and even wedges out in some part below. The deposit consists principally of copper and iron pyrites and quartz. There are several similar deposits close to the large one. A layer of talc and chloritic minerals surrounds and penetrate the mass. The portions which penetrate into the mass are called by the Swedish miners "skolar." The width of the skolars varia often between 2 and 20 yards, and sometimes are even 40 yards wide, still many cannot be brought under either of the two classes. In the old clay-slates of Andalusia, in Spain, there are many large deposits of iron pyrites (containing a small percentage of copper pyrites) which at the surface have been decomposed, forming browning the surface have been decomposed, forming browning browning the surface have been decomposed, forming browning the surface have the decompose

the old clay-states of Andalusia, in spain, there are many large deposits of iron pyrites (containing a small percentage of copper prites) which at the surface have been decomposed, forming brown iron ore. The deposits generally occur in large lenticular masses. The principal ores occurring in stocke are iron and copper pyrite.

The principal ores occurring in stocke are iron and copper Pyrtes and other copper ores, various iron ores (especially spathie), and magnetic iron ores, iron glance as at Elba, galena, electric ciamine, brown ironstone, and rock salt. The coal at Creusot and Montchanin, in France, occurs in stock-shaped marsos—the former 65 yards wide, and the latter from 25 to 75 yards wide. Stocke are very often found on the limits between different strata as is the case in the iron ore stocke at Stahlberg, in the Thuringian forests, between granite and limestone; in the calamine stocks in Westphalia, between limestone and slats; and the hematite deposis in Cumberland and Lancashire, which occur in the great majority of instances on the top of the mountain limestone (where there is or has been a series of new red sandstone strata), in very irregular a

in Cumberland and Lancashire, which occur in the great majority of instances on the top of the mountain limestone (where there is or has been a series of new red sandstone strata), in very irregular deposits, opening out sometimes like a regular vein, but often suddenly closed up. It seems very probable that the place of deposit has been opened out by water, the hematite being originally deposited as a carbonate, in which form it was thrown down parly, displacing the limestone, and partly in previously existing caveras. Stocke repeat themselves sometimes in the same strata, mostly without order, and then only when lying between different strata. Stockwerke are masses of rock which are impregnated with ore or traversed by numerous small veins, which cross and runing each other in all directions, in such a manner that it is necessary to work the whole mass of the rock in order to win the ore. Examples: At Altenberg, in the Erzgebirge, the granite mass is traversed by numerous small veins, from 1 in. to 8 in. in width, intersecting only at very acute angles, and are besides collected in groups, so that several occur very near one another. They consist chiefly of quartz, but contain steatite, tin ore, wolfram, and mispickel. The tin ore is not confined to the veins, but occurs in the country rock, which is more or less impregnated with it. It is impossible to determine the limit between the quartz of the lode and the stanniferous quartzose country rock, so gradually do they merge into one another. The Carclase Mine, near St. Austell, in Conwall, consists essentially of a decomposed, and, therefore, readily workable granite, which is traversed by numerous ting duartz and school veins about the inverse of the lode and the stanniferous quartzose country rock, and school veins about the property of the lode of the stanniferous quartzose country rock, winch is the stanniferous quartzose country rock, winch is the stanniferous quartzose country rock, was also the stanniferous quartzose country rock, was also the stannife

The Carclase Mine, near St. Austell, in Cornwall, consists essentially of a decomposed, and, therefore, readily workable granite, which is traversed by numerous tin, quartz, and schorl veins, about 6 in thick, which cross each other without faulting, and it is at their interestion that the schorl crystals are usually found.

B.—NESTS, &c.—Under the term "nests" are grouped the smaller mineral deposits, of a more or less regular shape, which occur reparately in the ground, and which may, to a certain extent, be considered a very strong stockwerke.

Somewhat more irregularly shaped masses of ore, which are often due to a disturbance of former deposits, are classed under the name "pockets." They are often crevice-shaped spaces filled with clay, in which the ore is mixed. Bone ore and clay iron ore often occur in pockets.

C.—STREAM-WORKS AND SUPERFICIAL DEPOSIT.

1.—STREAM-WORKS: Like pockets of ore stream-works are produced from the disturbance of former deposits. Stream-works are heaped up mineral masses which have been formed by the weathering and denudation of rock, containing deposits of ore, and consist ing and denudation of rock, containing deposits of ore, and consist, therefore, of fragments of the most various shapes, sizes, and descriptions, amongst which the fragments of ore are more or less finely divided. In other words, stream-works may be considered as the result of a natural dressing process on a very large scale. As might, therefore, be expected, they are often richer than the original deposit, from which they are sometimes far distant, and to which they are sometimes very near; they are often covered by a deposit of turf, sand, clay, and the like. In some cases the deposition has long since ceased. As might be expected from the mode of their formation, they are generally found on the sides of hills and mountains, in valleys and ravines, in beds of rivers, and in large plains.

long since ceased. As night be expected from the mode of their formation, they are generally found on the sides of hills and mountains, in valleys and ravines, in beds of rivers, and in large plains. Tin, as tinstone, occurs more frequently than any other ore in stream-works—in Malacca, Banca, Australia, Penzance, Cornwall, Saxony, and Bohemia, in the neighbourhood of granite rocks, which are traversed by tin veins. Gold is found in stream-works in the Western Ural Mountains, Australia, Brazil, California, Transylvania, Spain, Hungary, &c. Platinum, often with grains of chrome, titanic, and magnetic iron, in Brazil, Hayti, Borneo, and the Ural and Altai.

2.—As distinguished from stream-works, superficial deposits have been formed in the positions in which they are now found; they are generally the filling up of surface hollows, and are sometimes covered with a layer of alluvial earth. To this class belongs—
Bog Iron Orde.—This is generally the result of a deposition from ochery springs. The ore is usually mixed with peat, sand, and the like; the ore occurs porous or honeycombed, and often contains phosphoric acid in combination; it is found in Lusatia, Brandenburg, Prussia, Pomerania, Lower Silesia, Westphalia, Poland, and Russia.

PEAT.—This consists of the remains of dead plants, which, under favourable circumstances, allow of the growth of new ones, and thus after one crop of turf has been cut after some time another will have grown in its place, so that a regular consumption and reproduction can be kept up. The thickness of the deposit usually varies between 1 ft. and 10 ft., though others occur much thicker; in this latter case layers may often be distinguished, giving to the deposit a stratified appearance. Sometimes the deposit has only a slight covering of sand, and in other cases there may be a cover of diluvial strata as much as 50 ft. and more in thickness, as at Müblhausen.

As a supplement to this first section we must consider those disturbances of the strata which have caused parts of strata to

As a supplement to this first section we must consider those disturbances of the strats which have caused parts of strata to have been moved from their original position, and which are all included under the general name of "faults." In the following we shall chiefly follow

Von Carnall as, perhaps, the best authority on the subject.

DEFINITION.—When two portions of strata are separated from each other by a cleft (which is filled with the neighbouring rock), and so that one portion lies higher or lower than the other, we call the cleft a "throw" or "fault." This definition holds true for throws of veins. If we say that one portion has been moved to the right or left of the other we shall have an apparently correct definition, yet in reality

other we shall have an apparently correct definition, yet in reality the one portion of the vein lies higher or lower than the other. By every fault there are three things to be considered—the fault or cleft, the mass which fills it, and the position of the separated rock masses with regard to each other, which includes also that of the deposits, the lode or the seam of coal.

We shall first occupy ourselves with the fault or cleft, without taking into consideration the position of the neighbouring strata. The space separating two portions of strata is usually called a cleft, which, according to the idea of the person using the term, may be either hollow or filled, so that by a fault we understand the space included between the two adjoining sides of the separated rock masses. The position of such a fault is given (as by veins) by its strike and dip. The dip has the greatest inclination to the horizon strike and dip. The dip has the greatest inclination to the horizon

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^{*} Being Notes on a Course of Lectures on Mining, delivered by Herr Bergrath Dr. Yon GRODDECK, Director of the Royal Bergakademie, Clausthal, The Harz, Dr. Von GRonde.

1877.

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fary line drawn in the fault. In short, we may consider a fault of any try thin prism, whose strike is represented by the direction of as very thin prism, whose strike is represented by the direction of the length and dip by its downward inclination. As the position of the length and dip by its downward inclination. As the position of a fault fully determined by the strike and dip. A the position of a fault fully determined by its strike and dip. A the position of a fault fully determined by its strike and dip. A the position of a fault fully determined by its strike and dip. A fault occurs but seldom perpendicular, though nearly always with a fault occurs perfectly perpendicular the separated masses. When a fault occurs perfectly perpendicular the separated masses with the exception of one lying higher or lower than the other) the same relation to each other; when, however, the fault is inclined the same relation to each other the one of the separated masses forms the hanging and the other the one of the separated masses forms the hanging and the other the one of the separated masses forms the hanging and the other the one of the separated masses forms the hanging and the other the distance of the two walls from each other (taken at the hickness is seldom great, yet often in the same fault a great the hickness is seldom great, yet often in the same fault a great the hickness is seldom great, yet often in the same fault a great the hickness of the fault; in the hickness with which the fault is filled often appears determine, as the mass with which the fault is filled often appears determine, as the mass in the faults is sharply cut off against the sired when the mass in the faults is sharply cut off against the sired when the mass in the faults is sharply cut off against the sired when the mass in the faults is sharply cut off against the sired when the mass in the faults is sharply cut off against the sired when the mass in the faults is sharply cut off against the sired when the mass of the f is black. Sometimes the contents of a fault consist of a mixture of gly and sand, which is often without consistency, and contains water mechanically mixed. The two rock masses, as we have said, are separated from each other by a distance equal to the thickness of the throw, and at the same time according to our principal definition the one lies higher or lower than the other, and the question pur occurs in what direction have the two masses separated from the other.

Indicates in what direction have the two masses separated from sech other.

Experience furnishes the following general rule:—The movement of separation has taken place in the direction of the dip of the throw, and has taken place equally at all points in the throw. The latter part of the rule follows from the first, for when a plane moves in a simple direction over another, so must all the points in the plane have described equal and parallel lines. The length of a line which measures in the direction of the throw, how much two previously erresponding points have separated from each other, gives the amount of the throw, or according to some writers simply the throw. If we consider the fault as a plane the amount remains the same for all places. Unless the fault be vertical the throw is represented by a inclined line, and the corresponding vertical height gives the vertical component of the throw.*

Suppose a, b, c, Fig. 3, any horizontal line drawn in a rock mass, which is afterwards separated into two parts by the throw A B, then the line a, b, c will be likewise divided into two parts, of which the one, b, c', will be lower than the other, a, b. If, now, we join the two corresponding points, b b', by a straight line, this line will be in the plane of the throw, and its length gives the amount of the throw: the vertical amount of the throw is given by the vertical line, b d. If, now, we imagine a great number of such lines, a, b, c, to be so divided, the length of the connecting line, b b', remains the same for all, and in consequence of their parallelism they are all identical with the dip line of the fault. As previous to the throw bat sides of the fault occupied the same position, the important exection presents itself which of the two separated rock masses is sme for all, and in consequence of their parallelism they are all identical with the dip line of the fault. As previous to the throw bath sides of the fault occupied the same position, the important question presents itself which of the two separated rock masses is usually the higher, and which the lower? In answering this question there are two chief ca-es to be considered—either the throw is perfectly vertical, or it is inclined. In the first case we have no grand for saying that the one side should rather be found lower or higher than the other. On the contrary, when the fault is inclined with very few exceptions, the hanging mass is found lower than the lying mass—or in other words, if we consider the lying wall of the fault to have remained stationary, the hanging wall of the fault has slid downwards. There are, however, exceptions in which the contrary has taken place, and these we shall consider later on under the name of reversed faults, in contradistinction to the most usually occurring case, which we shall simply designate fault or throw. The courrence of a perfectly vertical fault is so seldom that its consideration may be treated as subordinate to the two previous cases. Asby a vertical fault the distinction between the hanging and the lying walls disappears, which is essential to the definition of a fault, and reversed fault in the sense in which we have used those words, we shall distinguish this latter under the name of vertical throws or vertical faults. We have thus divided all possible cases into three, under the names—1. Fault or throw.—2. Reversed fault or throw.

"Recognized fault or throw. -3. Vertical fault or throw.

According to some writers this vertical component is called the throw

SOUTH STAFFORDSHIRE AND EAST WORCESTERSHIRE INSTITUTE OF MINING ENGINEERS.

INSTITUTE OF MINING ENGINEERS.

The tenth annual meeting of the members of this Institute was seld, on Monday, in the Geological Museum, Dudley. Mr. Thomas Latham, the retiring president, took the chair at the opening of the proceedings, and there was a numerous attendance.—It was resolved that a letter of condolence be sent to the family of the late last. Yeomans (Oldbury), a member of the Institute.

Mr. Alexander Smith, C.E. (secretary), then read the report of the Capality.

If. ALEXANDER SMITH, C.E. (secretary), then read the report of Cuncil:—
is exceedingly gratifying to your Council to have to report that the year just ele—the niniti of the existence of the Institute—has been, if anything, an imperent upon its predecessors, and that the Institute is in a prosperous and shing condition. Eleven general meetings have been held throughout the case of the mat Dudley, three at the Midland Institute, Birmingham, and at the Rowley Hall Colliery. The Council have had twelve meetings, and at the Rowley Hall Colliery. The Council have had twelve meetings, and have been three interesting excursions. There has been a great accession of members, 29 having joined, and this would have materially increased the beet, but the Council regret having had to perform a duty in conformity with rules in striking out the names of ten members from the register, who were appealed to times out of number. Three much respected members have a possible of the Rowen and the council register, who were a possible of the Rowen and the Rowen and the second of the Rowen and the Land of the Rowen and Rowen and London, and was a real to the Rowen and Rowen and London, and was a real to the Rowen and Rowen and London, and was a real to the Rowen and Rowen and London, and was a real to the Rowen and London, and was a real to the Rowen and London, and was a real to the Rowen and London, and was a real to the Rowen and London, and was a real to the Rowen and London, and was a real to the Rowen and London and was a real to the Rowen and London of pressure to those who accompanied it. Owing to the excellent facilities of the sights in the famous city of Oxford were visited in the one day. On the Drainage Works, Woolwich Arsenal, the Royal School of Mines, and the English of Mines were all inspected, and your thanks are due to spik Bazalgette, Colonel Younghusband, and Mr. Trenham Reeks for their eccurrety and the favourable opportunities they afforded. The third and Parsion was to the Lyc Cross Pits, so admirably laid out by our President, are you were so well entertained owing to the liberality of the Right Hon. dof Dudley, and his chief agent, Mr. E. Fisher Smith. A second session clemistry class in connection with the Institute is in progress, and good being done. The Council draw your attention to the fact that the transacter they ear are for the first time fully illustrated, and did the members pay gazrd to their first rule, and develope their latent talents, or give more time interests of the Institute, they feel assured that the transactions or records are the real evidence of good work done by an institute), would be equal to duced in the kingdom.

Froduced in the kingdom.

The report was adopted on the motion of Mr. BLAKEMORE, selfed by Mr. GEORGE JONES. Letters of apology for non-attended were read by the secretary from Mr. David Peacock and Mr. W. Scott (sub-inspector). It was stated that the result of the ballot Sect t (ab)-inspectory. It was stated that the result of the ballot of the officers had been:—Mr. Thomas Parton, president; Mr. David eacock, vice-president; Mr. Thomas Brettell, treasurer; and Mr. dlexander Smith, secretary. Messrs. T. G. Nickling, George Barker, W. J. Clarke, W. W. Kenrick, and Thomas Pasfield were elected members of the Institute.

Mr. Thomas Latham thanked the members for their kindness and assistance during his presidency, and vacated the chair.

Mr. Parton, in taking office, said:—I thank you sincerely for the great honour you have this day conferred on me. I am not only sensible as to the honour which encircles this chair, but am equally alive to its entailed responsibilities. While the former fills me with pleasurable emotions as being one of the happiest moments of my life, the latter causes to some extent feelings of depression. I do feel it an honour to follow in the footsteps of those gentlemen, our personal friends we may call them, who have since the establishment of this institution in 1867 occupied this chair. We have looked up to these as veterans in the profession, gentlemen who have taken their degrees at the hard, unyielding school of toilsome experience, and, consequently well fitted for guiding this Institute in the noble objects set forth in the code of regulations. In what manner this has been accomplished can be easily determined by gauging the present condition of our Institute after ten years' existence. What is that state? Why, we have to congratulate ourselves upon being a compact, solid, and stable fabric, and we have as the result of work done by those who have filled this chair, and the individual members who have so well supported and assisted them, an institution full of life and vigour, with all the elements of success at its disposal. Gentlemen, it is to keep this fabric together, to enlarge and develope it, to add lustre to the mining profession, and advantages to the whole mining industries of this part of the community in particular that I crave your assistance. Let each member ask himself the reason for joining this Institute, let him refer to the code of rules, and then see if he cannot do aught to further the objects we have in view. I feel sure if this is done we shall bring no discredit on the accomplishment of the past, but add to the great usefulness of this praiseworthy institution. (Hear, hear. to the code of rules, and then see if he cannot do aught to further the objects we have in view. I feed sure if this is done we shall bring no discredit on the accomplishment of the past, but add to the great usefulness of this prise-worth institution. (Hear, hear.) If we compare the state of mining, oven in this district, ten years ago with what it is now we cannot but notice a transformation, especially so where "fresh fields and pastures new" have been distribed. Anyone who will trouble to take a trip round the green border line will find the science of mining in its various departments in high triumph. Engineering and the general laying down of plant may be seen equalling any in the British dominions. I refer more particularly to the northern and eastern portion of the coal field. The prime movers of these undertakings, requiring all the skill of modern science as applied to mining industry, are parts of our fabric. They are elements necessary to our growth, and we are proud of them. Still, all has not been done that can be. As an Institute we have abundance of additional work. We wish to assist and procure the success of improvements by which we can ensure economy and greater safety. There is a wide field for papers, and it is sincerely to be hoped that this year members will not be diffident in reading papers, however short, on improvements in winding machinery, improvements in pumping machinery, improvements in underground haulage, application of machinery to underground work, both in hauling and cutting coal. The inventive and constructive genius (and there is no doubt there is no wart of the element in this institute) will find scope enough here. Again, in the department of practical mining, and in that I included the ventilation, there is work for us all. As the circumstance, will find to his sorrow that he must go to school again. The mind must be disciplined by strict and extensive observation, and also by the quiet study of the sciences bearing upon the working of mines. Here, sgain, we stuy to com Why cannot we, as an Institute, undertake to supplement the unique and most able report on the geology of this coal field, by our late lamented friend, Mr. J. Beete Jukes, than whom a more practical geologist never held compass? Since his pen has grown rusty the green borderland which formed the then proved boundary or limit of the coal field has been obliterated. What he could only see but dimly—what was to him and all savans matters of speculation, to a great extent owing to the peculiarities of the physical structure of the district—have become matters of fact, and what they nervouly ventured to say might be are now actual demonstrations—notably so on the eastern side. Those members who have taken advantage of the excursions of the Institute to the surrounding coal fields—Warwickshire. Shropshire, and North Staffordshire—must have ob-Warwickshire, Shropshire, and North Staffordshire—must have ob-cerved the outward growth or extension of their "borders." As the exhaustion goes on, in and from the centre, the tendency and the fact is a widening of the outer or boundary circles. This being so, it is a certain fact that the common and well-known characteristics of the old worn coal field will be to some extent obliterated, and probably at times, through local disturbances, entirely wanting. It is important, then, that strict and accurate and scientific observation should be made of the peculiarities or striking characteristics of every seam, whether its strata be rock, ironstone, or coal, so that in the new extensions the identity and correlation of seams may guide and influence the undertakings, either in preventing utter waste, or in encouraging the speculations. For the want of this detailed information as to the exact mineral character, position, and the organic remains of each separate stratum, as far as can be determined, thousands of pounds have been fruitlessly thrown away. Excepting parts of Lancachire, South Wales, and Salop coal fields, and the Sandwell sinking, thanks to Mr. Johnson, this scientific information is wanting. Why cannot, then, members of this Institute, from both mining and scientific points of view, give this matter of every seam, whether its strata be rock, ironstone, or coal, so that

special attention, and have the results incorporated in our transactions? The mere discipline of effecting this will be found a wholesome tonic to the mind, and will assuredly increase its capacity for dealing with ordinary duties. The Institute would be also much benefited if members would present sections of the varied and extraordinary phenomena met with in our mining operations. How many peculiar and interesting faults, dykes, and a variety of disturbances have been met with, bailling all the practical and scientific skill of the explorer, which cannot now be pictured, and which may, if they had been sketched and exhibited, have been of great assistance, and certainly of immense scientific interest. This coal field abounds in phenomena of this kind. Let us, then, have assistance, and certainly of immense scientific interest. This coal them will be most instructive and of great prastical value to managers of mines in their explorations in search of minerals. Similar causes produce similar effects, and it is no uncommon fact that Nature does sometimes repeat particular phenomena. In such cases there would not be half the difficulty and mystery connected with them, for the simple reason that well-noted facts preserved in dealing with the phenomena the first time would afford the open-seame for any number of similar occurrences. In conclusion, I again ask for your kind co-operation in the cause for which we are net together. Let not little differences of opinion, which are sure to occur, mar the harmony of our discussions. Rather let them be stimulants to thought and accurate investigation; and, in the words of the stimulants to thought and accurate investigation; and, in the words of the stimulants to thought and accurate investigation; and, in the words this institution to be useful, as for at our our senset, endeavour at the institution to be useful, as for at our our our senset, and the institution to be useful, as for at our our our senset, and the surface of the part of the words of the surface and the su

Mr. Smith gradually rose to fame as a scientific mine surveyor, and for many years there was scarcely a mining question of any note, either in this or any adjoining counties, in which our friend did not appear. (Loud cheering.)

The President accepted the gift on behalf of the Institute, and Mr. Brooke Ridgway Smith—who was very cordially received—acknowledged the honour which had been paid him.

Mr. Fell (London) read a paper upon "Messrs. Hayward Tyler and Co.'s Pumping-Engines and Hot-Air Engines." The paper held that pumping machinery was one of the most important subject connected with mining engineering, and then the reader described the engines of the above firm.—Mr. Davey (Leeds) read a paper upon "Messrs. Hathorn, Davis, Campbells, and Davey's Compound Differential Pumping Engines and Hydraulic Pumping Engines."—Mr. George Jones (Dudley) read a paper on "Steam-Power versus Water-Power for the Melting of Iron."—Mr. F. Brown (Walsall) exhibited specimens of phothos taken by him in coal pits.—[These papers will be published in next week's Journal.]—Mr. Henry Johnson, jun, exhibited one of his colliery tubs, and explained his patent hollow axle lubricating arrangement. The exhibitor promised a fully descriptive paper at the March meeting.—The members afterwards dined together at the Dudley Arms.

ON THE WORKING OF THICK SEAMS OF LIGNITE IN вонеміа *

BOHEMIA*

The working of thick seems of lignite in the district of Eger, in Bohemia, has recently been the subject of enquiry by a commission appointed by the Austrian Government. The method found to be best adapted to the district is that by stages, the excavated ground being filled up with earth brought from the surface. At the Antony Colliery, in Davisthal, belonging to Mr. J. D. Starek, this method has been developed to a considerable extent in the working of a seam 78 feet thick, and is found to possess advantages over all others that have been tried, especially as a prevention of underground fires. Only one-half of the total thickness of the seam (37 ft. 4 in.) has been drained by a shaft; and this upper portion is worked on two stages—the first or upper one being 22 ft. high, and the second or lower one 15 ft. 4 in.; a thiskness of 3 ft. 3½ in. of roof being left in each stage. In the first instance the ground is laid out by a level from the pit, which serves as a main drawing road; and from it, at intervals of 29 ft. 6 in., boards 6 ft. 7 in. wide are carried at right angles towards the boundary. The coal is then taken away in a rib 10 ft. 6 in. wide, on either side of the board, commencing at the far end and working back towards the main level, safety ribs or pillars of 3 ft. 3½ in. being left at intervals of 29 ft. 6 in. between each of the working panels. In working the upper stage, the height was divided into two sections, the lower care of 9 ft. 10 in. each of the working panels. each of the working panels. In working the upper stage, the height was divided into two sections, the lower one, of 9 ft. 10½ in., was first taken away, and the packing material was brought in through a special level driven in the upper section, and thrown down to the excavations below, which were filled in pari passu with the re noval of the coal. In the upper section, the packing material is brought through the same roads as are used in drawing coal to the shaft, the ground having already been partly la dout in pillar work. The cost of packing material is estimated at 1s. 1d. per ton upon the coal got in working away the panels, that obtained in driving roads, amounting to 40 per cent. of the whole, not being included. Upon this whole mine, when laid out for working upon this system from the beginning, and with complete filling of the waste spaces, the cost is

* From James Forrest's "Abstracts of Papers in Foreign Transactions and evidence, for the Proceedings of the Institution of Civil Engineers.

about 8d. per ton; and with only partial filling, 3d. per ton. Against this must be placed the saving from the suppression of underground fires, which are of common occurrence when this coal is got in pillar work. The loss of coal in safety pillars and roofs is about 15 per cent.; the latter cause of waste being diminished proportionally as the height worked in one stage is increased.

H. B. Oosterwichen Zeitschrift für Berg und Hüttenwaren.

- H. B.: Oesterreichische Zeitschrift für Berg und Hüttenwesen.

MINING AND STOCK EXCHANGE NEWS OF THE WEEK. Messrs. F. W. MANSELL and Co. (Sworn Stock and Share Brokers), 43 and 43A, Palmerston Buildings, Old Broad-street, write to us as

EXCHEQUER (Gold and Silver).—Sharehollers even yet do not appear to comprehend the fact that their property is one of very considerable extent. The mine claims are—On the Buckeye No 2 lode, 4000 ft.; on the Acacia lode, 2000 ft.; and on the Fremont and Saugatuck lode, 600 feet, making a total of 6600 feet, whereas the largest area of any of the Comstock mines does not exceed 500 ft. The Exchequer Company also possesses 160 acres of excellent woodland on the top of the ridge and 600 acres in the valley and on hill-sides around the works. The mineral belt is a southern continuation of the geological occurrences of Mount Davidson, around which are found the Comstock mines. Prof. Raymond, the United States Commissioner of Mining Statistics, referring to the geological structure of the district, says that "the rocks are eruptive, composed of felspathic porphyry and volcanic tufas;" and that "the dykes are not dissimilar to the outcrops of immense veins, like the Comstock, and in this way the impression seems to have been created that they are actually the continuation of the Comstock lode, especially since irregular ore bodies have been found in some of these dykes."

The developments at Exchequer may be accepted in further proof of this opinion, since the ore body at the tunnel level is 60 ft. long horizontally, and tapers towards the surface almost to a point, while increasing in langthers towards the surface almost to a point, while increasing in langthers towards the surface almost to a point, while increasing in langthers towards the surface almost to a point, while increasing in langthers towards the surface almost to a point, while increasing in langthers towards the surface almost to a point, while increasing in langthers towards the surface almost to a point, while increasing in langthers towards the surface almost to a point, while

orizontally, and tapers towards the surface almost to a point, while increasing in length as depth is attained. There are two ore chutes, pitching in opposite directions, rapidly approaching each other, and widening or lengthening on the vein as they descend. Says Prof. Raymond, "The inference is obvious, and almost irresistible, that these are the upper points only of an irregular and much larger body, the main portion of which lies below."

Besides this wein, upon which as already stated, the company

body, the main portion of which lies below."

Besides this vein, upon which, as already stated, the company own 4000 ft., it has 2000 ft. on the Acacia, which crops out below, having a similar easterly dip, but striking north-west and southeast. The two veins, therefore, converge towards the north, and in the main tunnel, 700 ft. from the mouth, a cross-cut of 15 ft. eastward has intersected a vein carrying stibnite and ruby silver. This is supposed to be the Acacia. This supposition is confirmed by the "croppings" of both veins, which are prominent at many points. Samples from the Acacia "croppings" assay \$70 in silver per ton, but the vein has not yet been explored. A tunnel, however, has been driven to strike it, starting at a point 120 ft. vertically below the floor of the hoisting works. This tunnel has been driven nearly 200 ft. in country rock towards the vein. By drifting along the vein, and cross-cutting at one or two points to the Buckeye vein, the ventilation and drainage of both mines will be greatly facilitated. This is a most important point, as apart from the value attaching to the Acacia lode, the work, when completed, will afford additional facilities for speedy and economical development.

The latest of failed advises that the store in the 100 had been.

lopment.
The latest official advices state that the stope in the 100 had been driven 12 ft. during the week; the vein is 1 ft. 8 in. wide, good milling ore. No. 1 stope in the 200 ft. level, had been driven 10 ft. 1 ft. 8 in. wide, good milling ore. The 400 ft. level face shows a vein of good milling ore. No. 1 stope in the 200 ft. level, had been driven 10 ft. also in fair milling ore. The 400 ft. level face shows a vein of good ore 18 in. wide. The new foreman, sometime underground superintendent in the Virginia Consolidated, says, "He wishes no money if he don't supply our 18 stamps to their full capacity every day in the year, provided the manager gives him men enough." On Jan. 29 the mill was progressing to completion, and the battery was finished. The snow had prevented being taken up to the mine two heavy pieces of timber required for the hoisting works; when these two braces were taken up, the whole of the machinery would be completed. The lode increases in size and depth, and the manager steadfastly believes it will progressively enrich in quality. O'Hara expresses confidence that he will extract 55 per cent. of what is in the ore, and the manager thinks 90 per cent., adding, "the only limit to the quantity of ore obtainable from the mine, when the shaft has been sunk to the 1000 ft., will be that fixed by the number of men employed." The new hoisting-works just completed are capable of carrying the shaft to a depth of 1000 or 1200 ft.

Isabelle (Gold and Silver).—Charles Kingsley never said any-

ISABELLE (Gold and Silver).—Charles Kingsley never said anything more truly than when he said—Geology is the Science of Common Sense. All who have the gift of common sense may read common sense. All who have the gift of common sense may read the book of out-doors. Any standard of exclusiveness in geological observation other than the possession of the noble gift of common sense to follow where necessary from the known to the unknown is, whenever set up, a bar to the general progress, and to scientific progress a curse. It may even be a bar to merited material prosperity. The geography and approximate continuations of the world-famous auriferous slates of the Sierra Nevada of California, should have been determined and become universal property in outlinest least been determined, and become universal property, in outline at least

where annually since 1849, 10,000 men of intelligence—chiefly miners—have been making sections of exploration across them, and several thousands have travelled along their whole length, and observed them in longitudinal profile, what cloud of darkness can it have been that prevented the light of the common intelligence from heaming forth in a common recognition of the facts?

beaming forth in a common recognition of the facts?

The area of predominating granite was once, probably, pretty generally covered by slates—which were accordingly subjected to all the vicissitudes attending the uplift of a granite mountain core that of the Sierra Nevada. The slates are mostly gone; they would naturally have been less thickly bedded so close to the middle age shore. Between the Oroville Table Mountain and Piety Hill (near Shasta city) gold mining district, the slate or gold formation, crosses Sacramento Valley, and is cut off, partly only exposed by the deep erosions of the upper Sacramento, being covered at the surface throughout this 50 miles of distance by a broad sheet of lava from Lassen and Shasta Peaks, the tabular cliffs of which, as plainly seen from the railroad, designate the shore line where these lavas broke into the Pliocene sea.

That the slate-forming muds were deposited in pretty deep water.

That the slate-forming muds were deposited in pretty deep water throughout a pretty long period of time we have good reason to be-lieve, from their consistency and vast thickness. No careful geo-logical measurement of the thickness in feet has ever been attempted with satisfactory results. Yet it would seem that in the extreme simplicity of the regularity of the bedding of the slates along the entire western slope of the range we should not find it difficult to hit upon the precise method of granite uplift whereby the off-shore mud strate became shared into a dome of upwarelleled sublimity. presenting to our view a base or section of at least 100 miles, and an altitude of at least 10,000 to 14,000 ft. The granite island contres, as they were then in the axis of the Sierra Nevada, before the uplift of these beds, had the same relation to the Pacific shore of the period that the granite Farallong Islands have to the Pacific shore of to-day. at least 100 miles, and

that the granite Farallong Islands have to the Pacific shore of to-day. Though the gold product of California has diminished necessarily since the "days of old, the days of gold, and the days of 49." yet it is far more considerable than most people imagine. For the past year the gold yield of California is roughly estimated at \$20,000,000, and this will be largely increased if from no other reason than the rapid and steady improvement of all kinds of machinery, and the application of advanced scientific principles to every branch of industry, thereby permanently lessening the cost of production.

In the Eastern Slope of the Sierra, adjoining Nevada, is the principal silver district of California. Silver Mountain is the prominent feature in this district—its mineral lodes are more numerous, some of them even of greater magnitude than the Comstock, while in the

feature in this district—its mineral lodes are more numerous, some of them even of greater magnitude than the Comstock, while in the average richness of the ores the latter bears no comparison to those of Alpine. In the facilities for cheap working the Silver Mountain Mines are unsurpassed. The Carson river and its tributaries, which are principally fed by the Alpine snows, furnish a water-power

sufficient to drive thousands of stamps, to which the mineral ledge are in close proximity. The mountains are covered with the fines are in close proximity. The mountains are covered with the finest timber, and it is from this source, floated annually down the Carson, that the 40 companies working the Comstock lode obtain much of Silver Mountain is a little north of east from San Francisco, dis

tant about 350 miles; it is almost directly south from Virginia city, and its mineral belt is undoubtedly a continuation of that of which the Comstock is the principal lode—the same course magnetic north and south passing through and connecting both districts. The mineral districts of Alpine County are of far greater extent than that developed in and about Virginia.

than that developed in and about Virginia.

I. X. L. (Gold and Silver).—The indications in the 200 ft. level point to the near approach of the bonanza, which made this mine famous in 1861, resulting in the establishment of the mining district of Silver Mountain. Referring to this point, the manager some time since wrote as follows—"Not only have we not yet reached this ore body, as to the existence of which there can be no doubt, for it yielded to the superficial scratching of those early days, from a space only 40 ft. long by 22 ft. high, ore which milled at Silver Creek, now the Exchequer Mill, over \$50,000; not only have we not yet reached this ore body, but our new works have not yet extended into the original I. X. L. location, the conformation of the ground requiring, and economical working demanding, that the engine-shaft

into the original I. X. L. location, the conformation of the ground requiring, and economical working demanding, that the engine-shaft should be sunk on the Buckeye portion of the ground."

The latest information states that the 200 north is in 436 ft. from the cross-cut, and the manager is glad to say, "with every indication of getting into a paying body of ore at no distant day." The lode now is running in the drift, as on the top, considerably west of north, with well-defined walls, 7 ft. wide, dipping east. The rise under the O. K. is up 84 ft., and in very hard quartz; lode 10 ft. between walls. The Buckeye adit, which takes the shaft-water 35 ft. from the hoisting-floor, now 111 ft. north from the shaft, has turned out five carloads of good ore.

ERSHABDT AND AURGA.—The Eureka Sentinel has the fol-

EBERHARDT AND AURORA.-The Eureka Sentinel has the fol-

owing:—
We congratulate our White Pine neighbours on the fine showing of the above ine at the half-yearly meeting of the directors in London. The mine is out of ebt, and \$263,000 in the treasury, a portion of which was set aside for a fund to ebt, and \$263,000 in the treasury, a portion of which was set aside for a fund to sure the completion of the incline and tunnel. There were 8000 tons of ore taken on the mine, and prospects of a further extraction. Capt. Drake was highly in the mine, and prospects of a further extraction. Capt. Drake was highly I Pogonipers. We are sorry to learn that the hopes of the directors in relation is keeping the working force employed during the winter months were not realised advices from Hamilton announcing the discharge of 35 miners. This will only a temporary, and the re-establishment of good roads and pleasant weather will be a signal for their re-employment. There is a big vein down in the bowels of reasure Hill, and when that incline reaches it Hamilton will boom as of yore hope that time is near at hand, for the men who have stayed with the place trough its failing fortunes deserve a recompense for their faith and perseverance. We find from other sources that during this long and successful an of more than eight months there were but few stoppages, never

ran of more than eight months there were but few stoppages, never more than a couple of days at a time. It is now shut down for the winter, and will undergo complete overhauling. The total product last year was \$550,000. Some 35 men have been discharged from last year was \$550,000. Some 35 men have been discharged from the mines, only a sufficient force being retained to push on the in-cline, and those employed on the tunnel. The White Pine News says, "This is to be regretted, more particulary as everyone expected the company would keep on a full force all winter. Many of the dis-charged men left this week for Eureka, Austin, and other localities,"

FLAGSTAFF (Silver).—This mine seems likely to re-occupy its former prominent position, and there appears to be the best reason to believe that this time the results of the success will pass into the shareholders' pockets, and that the success will be upon a scale satisfactory to all connected with the property. The mine is situated in Little Cottonwood, the most prominent district of the Wasatch. Many of the mines near the summit of the mountain are 10,000 ft. Many of the mines near the summit of the mountain are 10,000 ft. above sea level. The canyon is a deep gorge about 15 miles long, and opens out west into Jordan Valley, 15 miles south of Salt Lake City. The lower portions of the canyon present some grand scenery where it cuts through the great dome of granite that occupies the central axis of the upheaval. In the Flagstaff, the ore is found in bedded deposits between the floors of limestone, or in the contact line between beds of different character. The footwall consists of a white crystalline limestone, and a dark shaley impure limestone the hanging wall. The strike being north-west and south-east, and dip north-east of 40° to 60°. The gangue-stone is a brecciated zone of silicious limestone, varying in width from 30 to 100 ft.; the ore occurs irregularly in pipes, bonanzas, and segregated beds, penerating the crushed zone in various directions, but the ore in most part is confined to the upper or hanging-wall side of the metalbearing zone.

As regards the developments of its ore deposits, Utah is advanc-

bearing zone. As regards the developments of its ore deposits, Utah is advancing with great rapidity. It is now scarcely 10 years since the first discovery of precious metals was made, yet a depth of over 1000 ft. has been gained in six mines, and over 30 have reached 500 ft. from the surface. The causes of this rapid development are to be found in the great size of the ore deposits, the comparative softness of the country rock, and the ease with which the mineral is reduced. country rock, and the ease with which the mineral is reduced. What may be termed the native product—silver-lead orea-is offered and bid for in lots of 1000 and 1500 tons, and the contracts between mineowners and smelters, if there be contracts, are on the basis of

hundreds of tons per month.

When one enters Salt Lake City, the immediate and overwhelming impression is that you are in a mining centre. Offices of mining and smelting works are to be seen everywhere, and by the doors and in the windows are huge specimens from the mines. The banks are provided with handsome and well filled cabinets, the hotels the are provided with mandsome and well filled capinets, the notes the same, and at the railroad depots are to be found carloads of incoming ore, or outgoing base bullion. Everywhere are signs of the mines—the citizens can talk intelligently of their main industry. A visitor to Salt Lake City is immediately impressed with the notion that the Gentile merchants are building up their trade on a good solid foundation—the mines, and are not afraid to let outsiders see their honorass. their bonanzas.

PATELEY BRIDGR (Lead).—The report this week states that the 30 east on Rake vein is of a most congenial character, more than 6 feet in width, intermixed with carbonate of lead, quartz, and blue ore, and from all appearances, the manager believes, they are bordering on a general deposit of metal. The 30 west is opening out wider, so much so that a considerable portion has to be left standing to the south, and the leading part on the footwall, which is being followed, produces fine ribs and patches of ore. The south cross-cut in the 20 west to cut Lumb vein is letting out more water, proving the proximity of the vein. A metal pitch has been let behind the forebreast on the new vein discovered some time since; two men have taken this pitch at 70s. per bing of clean ore. Fielding's in the roof is worth 15t. per fathom for lead ore; the metal pitch, its top part of bed, is producing 25 cwts of lead ore per fathom. The Sun vein going east from the bottom of the new shaft is 5 feet wide, consisting of quartz, blende, gossan, c. rbonate of lead, and blue lead ore—together worth about 15t. per fathom.

West Pateley Bridge (Lead).—The manager writes that the vein in the rise in the back of the 56 has again improved, and that PATELEY BRIDGE (Lead) .- The report this week states that the

west far leaves that the wind of the 56 has again improved, and that other parts of the mine are unchanged. Dressing operations going on steadily. At the special meeting, on Wednesday, it was unanimously resolved that the 51 shares should be subvivided into 11 shares, so that, instead of 4000 shares of 51 each, there are now 20,000 shares of 11 each. It was officially stated that "the mine is opening out in a most encouraging manner." ing out in a most encouraging manner."

GENERAL MARKETS .- Business throughout the week has been very inactive; towards the close, however, a little improvement was observable in a few instances, but there is as yet great slowness to respond to the more favourable political indications reported from the Continent, among which may be enumerated more par-ticularly the conclusion of peace between Turkey and Servia, the prospect of a like arrangement with Montenegro, and the pacific tone of the German Emperor's speech.

KINGSTON CONSOLS.—Is will be seen from the weekly reports that these mines are continually progressing, and the monthly sales or ore regularly increas-ing both in quantity and value. The sampling for March 1 will produce over 400t; that of Feb. 1 was 375t. All the ore sold has been taken from the 15 fm.

evel, and they have now commenced cross cutting in the 30, in which the lode is very rich; so that we look forward to this turning out a great and profitable is

NOTES ON CHILI-COQUIMBO. At the port there is little to see, so let us take the train inland

and have a peep at a South American copper smelting work, and go down one of the oldest and richest copper mines of "El Dorado," down one of the oldest and richest copper mines of "El Dorado," "the golden land." As in the natural order of things the copper has to come out of the mine ere it can be smelted, we shall take the mine first in order. A ride of five miles from the railway termline, at a clean little town styled "La Sarena," the serene city, because I suppose everything there is always "all serene," brings us to the fost of a quebrada or valley, and right before us, half-way up the bill, we see a chimney sticking out of the hill-side, like as if a Vulcan had his smith-shop below. This is for the mine engine, as we shall presently see. The entrance soon faces us, being through a long narrow tunn, run right into the face of the hill, and when we crawl through tule end we find this mine engine hard at work hauling up an incline see. The entrance soon faces us, being through a long narrow tunn; run right into the face of the hill, and when we crawl through to the end we find this mine engine hard at work hauling up an inclined plain the trucks of ores. Above us are 150 metres of solid rock, and below us the mine is sunk to as great a depth. The descent is made by ladders, with a landing every 20 ft., and to an inexperienced person the descent and ascent by means of these are most latiguing, and cause next day a stiffness of the leg muscles hardly to be credited till experienced. The ore is worked is galleries, and I believe runs in veins, the proper following out of these lodes forming the most important part of the duty of the mine captain. The miner brings what he has cut out to the mouth of the shaft, where it is drawn up by the "bogies" I have mentioned, and according to the percentage of pure copper contained in his lot, and according to the quantity he cuts out, so is the miner paid, a royalty being reserved to go to the owner of the mines. The miners work eight hours at a time without stopping for food or anything, and night and day. Sunday and Saturday, a gang is always hard at work. They seemed to me an especially hardy lot of men, having great powers of endurance and of hard work; the upper men, foremen and managers, are chiefly Cornishmen, whose experience in copper mining, very often largely inherited from their fathers, makes their skill invaluable out here, and consequently their services are very well remunsrated. The ore is found in many forms, chiefly as sulphide, with more or less sulphur in it, and is divisable into two great classes—(1) those containing much sulphur styled Bronce amarillo or yellow metal, and (2) those containing little or no sulphur, generally called. more or less sulphur in it, and is divisable into two great classes—
(1) those containing much sulphur styled Bronce amarillo or yellow
metal, and (2) those containing little or no sulphur, generally called
Bronce colorado or red metal. For a long series of years these sulphur ores were considered useless and too poor to be worked, till
the proprietor of this very mine, the great copper smelter and millionaire, Don Carlos Lambert, of Swansea, England, himself a firstrate chemist, taught them the process of working up these poorer
ores, and further showed the benighted individuals how to utilise
this excess of sulphur by subliming it and making sulphuric acid,
from which still further sulphate of copper is procured, a commodity
much in demand out here as a factor in the extremely beautiful to. much in demand out here as a factor in the extremely beautiful promuch in demand out here as a factor in the extremely beautiful process of extracting silver from its ores by amalgamation, a most interesting application of science to the arts, a few remarks on which I should like to endeavour to lay before your readers a little later on. As regards the copper mine now in our "mind's eye," suppose we have got the ores out of the mine in lumps of the size of one's fist. Then by a little boy, who, I am told, on merely looking at the ore, are estimated the precentage of turns converte, within a form that the precentage of turns converte, within a form that is a form of the size of one's first order.

Then by a little boy, who, I am told, on merely looking at the ore, can estimate the percentage of pure copper to within a few decimals, these crude ores are sorted into several heaps, the richest of which may contain 10 to 15 per cent. of metallic copper, and the poorest, perhaps, 3 per cent. By means of powerful crushers they are reduced to powder, and being held in suspension, are floated along in a stream of water to a large pond, precisely like a fountain's basin. The water, impregnated with these almost impalpable particles of ore, is led up into the centre of this pond through a pipe, branching out into four jets, which jets are made to revolve, and up this pipe, and through these revolving jets, the water with the ore in it runs, pouring itself out of them into the centre of the basin. Then the simplicity and ingenuity of this contrivance manifests itself; for by pouring itself out of them into the centre of the basin. Then the simplicity and ingenuity of this contrivance manifests itself; for, by the simple means of bringing the ore, suspended in water, through these rotary pipes, it is spread out thin, the water flowing gently over the whole surface of the pond, and as the ore sinks, owing to the law of gravity, it assorts itself into three marked kinds, the heaviest and coarsest particles sink first nearest the centre of the buddle, next a more pura mixture, and outside is the finest and purest of the ore. The two better kinds are again floated and spread out in another buddle, and the process as described repeated—say, six times—until in the last pond, a vastly improved powder is to be found. So effective is this inexpensive operation, that with a little water and a turbine the pounded ore is operation, that with a little water and a turbine the pounded ore is raised from 3 per cent. up to 20 per cent. Having been spread out to dry in the sun, this fine copper dust is put in skins and on muleback to be conveyed to the smelting works, distant some six miles. To visit these we again bestride our "Rosinantes," and by another route return to our quarters, close to the works, which are situated on the face of a hill, the railway from Coquimbo running into them. I was much struck by a remark made to me by the manager of this establishment, to the effect that, even in the comparatively short space of time he had been resident in that neighbourhood, he had most distinctly observed a decided change for the worse in the nature of the climate, and the extent and amount of rainfall, which has ture of the climate, and the extent and amount of rainfall, which has

diminished.

On looking back on the features of this part of the country near Coquimbo, after my experience of the deserts further north, I think I can trace the workings of the hand of Nature around Ia Serena and Northern Chili, itching to convertit by her active agents—never at rest out here—into something of the same howling wildernesses; many parts around showing signs of having seen better things now are but revenous aux moutons. Here again I must have recourse to the Gladstonian No. 3, and say that there are three chief products manufactured in these extensive copper works of La Compania. manuactured in these extensive copper works of La Compana. These are—(1) semi-pure metallic copper, containing 50 per cent of pure metal, and commercially known as regulus; (2) metallic copper, almost pure; (3) sulphate of copper crystals, chemically pure. The powdered ore, as it is after the washing process I have mentioned, is put into a calcining furnace, along with a flux of lime, and having been roasted for a requisite number of hours, after having been several times skimmed, the furnace is tapped, and out flows a stream of liquid copper, his aing and enabling as it runs leaveliles into the several times skimmed, the furnace is tapped, and out hows a stream of liquid copper, hissing and sparkling as it runs lava-like into the mould prepared to receive it. These blocks of metal, ere quite cool, are carried alongside and plumped into a pond, where, having lain a day, the water it run off, and we have before us a black-looking powder. This is regulus. Gathered up in this powdery form the ore is again submitted to the furnace's action, and after some one or two heats is run out in the form of metallic copper, of 96 to 99 per cent. purity. This ends this part of the process, and and we have cent. purity. This ends this part of the process, and and we have now copper ready for shipment to European markets. As I have said, the surplus sulphur fumes are led from the calcining furnaces to a sulphuric acid chamber, and through the use of nitrate of soda are, by a common process, converted into sulphuric acid. Incorporated with the poorer ores this acid converts a large portion of the copper into sulphate, and by repeated evaporations and re-crystallisations a concentrated solution is obtained, which on cooling, deposits most beautiful blue crystals. Thus is the sulphur, hurtful in metallic copper, utilised from the rich ores into cupric sulphate, and up the poor ones, an arrangement conducing immensely to the profit of the miner and smelter the first to adopt the arrange-

Leaving Coquimbo, we next call a halt at Chanaral, somewhat has his works, and I was permitted to feast my eyes on his immense stock of manufactured copper, valued at 300,000/ sterling mense stock of manufactured copper, valued at 300,000l sterling—a good stand-by in case the markets should prove restive. Connected with his works there is a railway, in one respect the most curious anywhere, for along the track one can enjoy a sail, there being on part of the line a steady breeze constantly blowing in one direction, which natural phenomenon is taken advantage of, and a sail being hoisted, away the cars go, spinning along at times up a steep incline anon along a plain. I have heard that in China they fix something like this on their barrows, but I could hardly have believed such an arrangement possible on a railway had I not seen the gear and sail THE FOLO

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HALF-YEARLY FOREIGN AND COLONIAL MINING SHARE LIST, JULY TO DECEMBER, 1876.

SHOWING THE PRICES OF THE LONDON MARKET ON THE 1st JULY AND THE 30TH DECEMBER, 1876, AND THE LOWEST AND HIGHEST PRICE FOR THE SIX MONTHS JULY TO DECEMBER INCLUSIVE.

CONTRIBUTED BY Mr. EDWARD ASHMEAD, LONDON MINING AGENT AND ACCOUNTANT, 62, CORNHILL, LONDON, E.C.

THE FOLOWING LIST EMBRACES THOSE MINES IN WHICH DURING THE PAST SIX MONTHS THERE HAVE BEEN FREQUENT DEALINGS AND CONSTANT QUOTATIONS, AND NOT THOSE IN WHICH THERE HAVE BEEN BUT FEW TRANSACTIONS AT LONG INTERVALS. SHARES HAVING THEIR TRANSACTIONS EXCLUSIVELY IN PROVINCIAL MARKETS WILL NOT BE FOUND IN THIS LIST.

| | EW TRANSACTION | | | | | | ly. | Aug | 1 | | mber. | | ber. | Nove | | | mber. | Price. | |
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| MINE AND COUNTRY. | Mineral. | Shares. | Paid. | Ju | Price, ly 1, 1876. | | Highest. | Lowest. | | | Highest. | Lowest. | Highest. | Lowest. | Highest. | Lowest. | Highest. | Dec. 30, 18 | 76. |
| ANCE. | Silver-lead | 10,000 | £ s. d | | 6 to 18 | 16 | 18 | 16 | 18 | 16 | 18 | 16 | 18 | 16 | 18 | 16 | 18 | 16 to 1 | 8 |
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| AIN. Alamilos* Fortuna* Lisares* Bo, 7 p. ct. Mort. Bon is. Do, 5 p. ct. Spanish Coupon Bonds Thatsis* | Lead Lead Copper Copper Copper Sulphur, &c | 35,000 25,000 15,000 225,000 49 350 £2,123,000 68,230 | 2 0 2 0 3 0 10 0 20 0 | 0 1 0 1 | 13 24 55 6 54 6 42 54 3 14 55 57 | 12 51 51 4 121 55 | 2½ 6 6 5½ 14 58 | 2 5½ 5½ 4 13 56 | 2½ 6 6 5½ 14½ 64 | 13 51 51 4 121 58 | 23 63 63 63 54 14 62 | 11/2 52/3 54/4 12/4 55/20/2 | 21 61 61 51 131 60 22 | 13 6 6 4 12 12 56 20 | 2½ 6½ 6¼ 5½ 13½ 60 24 | 13 6 6 4 123 57 21 | 63 53 144 63 23 | 6 41 133 1 | 2566444 333 |
| EVADA. Eberhardt and Aurora* Richmond* South Aurora | Silver Silver, lead, gold Silver | 54,000 | 10 0 5 0 5 0 | 0 | 9 91 8 8 3 8 | 81 8 | 9½ 9¾ 8 | 8½ 9 7s. | 9½ 10± | 81 8 | 101 | 81 81 | 91 11 12 | 7½ 8½ | 83 101 1 | 73 81 | 91 10 12 | 8 83 6s.3d. 8 | 8. 9. s. |
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Those marked with a * paid Dividends in 1876. The following Foreign Mining Companies also paid Dividends in 1876, of which the shares are seldom or ever quoted—the Copiapo, in Chili; Libiola, in Italy; New Zealand Manganese, in New Zealand; Victoria (London), in Austra'in; Western Andes, in Columbia; and the West Prussian, in Rhenish Prussia.

ready to set. I fancy, however, your readers must ere now have had a sufficient dose of copper. I shall have pleasure in laying believe them in my next a sketch of silver workings of the Caraceles had sufficient dose of copper. I shall have pleasure in laying believe the mines, and give some notes of those natural deposits of nitrate of soda found in the interior of B-divia and Peru, the feature of soda found in the interior of B-divided the soda found in the soda found in the interior of B-divided the soda found in the social peru and the social pe

Mining Correspondence.

BRITISH MINES.

BRITISH MINES.

ABERDAUNANT.—S. Toy, Feb. 21: Deep Adit Level: The rise is 6 fms. above the level, and is now thoroughly communicated with the new shaft; I have set six men to cut the shaft down to the deep adit to its full size (# ft. by 5 ft.) In the east part of the sett (Crowlwn) the cross-cent to drive towards the south lode by six men and one boy, at 10% is, per fathom, for the month; the ground is hard for driving; we have not discovered anything new here during the past week.

ASSHETON:—John Craze, Joel Maniey, Feb. 22: In the 60, west of boundary, the men are engaged cutting into the lode, which, as far as seen (4 ft.), is composed of quartz, blende, and lead ores of a very kinaly appearance, not yet through. No change worthy of remark in any of the various bargains.

BEDFORD UNITED.—Feb. 22: As Saturday is our pay and setting day a full report will be furnished next week. A fine pile of ore is being hauled from the shaft to day, and theimine generally continues to look exceedingly well.

BLUE HILLS.—S. Bennetts, A. Gripe, Feb. 17: The north section of the lode is not as yet intersected in the rise on the gossan above the 80. The south section of the lode over this gossan is worth 6t. to 7t. per fathom. The north lode in the 30 east is 2 to 3 feet wide, of a very promising character, and worth about 5t. per fathom.

EODIRIS.—H. Hotchkiss, Feb. 21: The 60 east, upon main lode, is progressing

of the lode over this gossan is worth 8t. to 7t. per fathom. The north lode in the 30 east is 2 to 3 feet wide, of a very promising character, and worth about 5t. per fathom.

BODIDRIS.—H. Hotchkiss, Feb. 21: The 60 east, upon main lode, is progressing satisfactorily, but the ground is still hard, which, however, is a good sign of productiveness. The lode is composed of carbonate of lime, gossan, and good specimens of lead and blende. In the cross-cut driving south, to intersect Man-y-pull lode, there is no change to notice, but good progress is being made. The 46 driving as good course of lead and blende, leaving above and below valuable stoping ground as reserves. The 30 driving east is now within a few feet of the south portion of the lode, which we shall probably have cut in time for next report. The rise in the back of the 45, to communicate with the 30, has improved for lead this week. No other change.

CLEMENTINA.—W. Bennetts, Feb. 29: There is nothing new calling for remark in the above mine since last week's report. We have broken some nice lead work from the south end of the shaft in the past week.

COMBMARTIN.—C. H. Maunder, Feb. 22: No. 3 level is cleared, and the water let down; we find it is a cross cut driven out to the lode, and a communication made with No. 2 at the 15 east for ventilation. In the shaft we are down so as to be able to give vent to the confined air in the former workings; we find it is necessary to put down a few fathoms of air-pipes at once, after which the clearing of the shaft will be resumed with all vigour to the 28. At the 15 west the lode is producing some good quality silver-lead, with every indication in favour of an early improvement as the drivage is extended.

CWM ELAN (New).—W. Goldsworthy, Feb. 17: The engine-shaft is down 6 ft. below the 50; the lode is still keeping its unferlie, and is worth 15 cwts. of lead and blende ore per fathom 70. 2 ditto is worth 15 cwts. of lead and blende ores per fathom. No. 2 ditto is worth 15 cwts. of lead and blende ores per fathom

per fathom. No. 2 ditto is worth 16 ewts. of lead and blende ores per fathom. The stope in the same level east is worth 12 ewts, of lead and blende ores per fur forthwith.

CWM YSTWITH.—Feb. 22: In Michell's level, to drive west on the new lode, the lode is 2 ft. wide, worth 10 ewts. of lead ore per fathom, and very kindly. A winze to sink in bottom of Michell's level west, on the new lode; the part of the lode as being taken down for 1 ft. wide is poy, but the main part of the lode as driven on in the level is standing on the south site of the winze; and as it is now dry for sinking, and fearing if we cut into the south we shall get down the water, thus we think it advisable to sink on as we are, and blast down the lode after. Michell's cross cut to drive north; the ground still continues very stiff for driving. Michell's level to drive east, on the new lode; the lode is 2 ft. wide, composed of clay-slate, gossan, with small spot of lead ore—saving work. The 12 to drive east, on the new lode; the lode is 3 ft. wide, worth 1 lewts of lead ore per fathom. Gill's upper level to drive east on the new lode; the lode is 5 ft. wide, worth 1 lewts of lead ore per fathom. Gill's upper level to drive east on the new lode; the lode is 5 ft. wide, worth 1 lewts of lead ore per fathom. Gill's upper level to drive east on the new lode; the lode is 5 ft. wide, worth 1 lewts of lead ore per fathom. Gill's upper level to drive east on the new lode; the lode is 5 ft. wide, still strong and masterly, showing spots of lead ore and blende, saving work that will pay to put at the Collom's ore washing machine, but will not do by hand labour. A cross-cut to drive north in Kingslide alit: this cross-cut was suspended some time since, but as yet not autholient to value; however, we wish to drive another fathom. A cross-cut to drive north in Kingslide alit: this cross-cut was suspended some time since, but as yet not autholient to value; however, we wish to drive another fathom. A cross-cut to drive north in Kingslide alit: this cross-c

s will r-pay us for our post outlay.

DERWENT.-J. Morpeth, Feb. 20: Jeffries' Shaft-Middle Vein: The 95 fm.

the shaft, is looking sent or perfations. The voice in the book, 175 follows west of the shaft, is looking sent of the shaft of the sha

DUBBY SYKE.—Wm. Tallentire, Feb. 16: Dubby Syke Level: We have the level in a good position for being pushed forward, and are making good progress. I consider it more workmanike to drive further east before we rise, and will be no more loss than driving a drift above; it will only detain us a short time now, and will make a better job of the place; turn out as it may I have a good opinion of this ground for producing lead. The scar limestone is close above us, and is about 4 fms. 3 ft. thick, from which a great amount of lead ore has been extracted almost wherever tried in this vicinity. It is unworked from the present forehead the whole extent of the sett eastward.—Shooting Box Level: The ground is a great deal firmer at present, I think rather more like bearing than it was; we are pushing forward at a good speed.

EAST CARADON.—James Kellow, Thomas Trelease, Feb. 21: William's shaft was sunk during the past month I fm.; the ground continues without alteration. To sink the winze in the 130 3 fms. stent by nine men, at 194; it measured 2 fms. 3 ft.; the lode is 2 ft. wide, intermixed with capel and quartz, the ground continues favourable for sinking. To drive east on the caunter I fm. stent by four men, at 12!; it was driven I fm. 3 ft.; lode 3 ft. wide, composed of quartz, mundic, and spots of ore—ground by side granite. To drive west of eastern cross-out, on south part of Child's I fm. stent by two men, at 25! bs.; it measured 3 fms. 5 ft. 3 in., yielding 1 ton. No. 1 stope in back on Child's 4 fms stent, by four men, at 28. its.; it measured 6 fms. 9 ft. 3 in., 4 ft. 11 in., yielding 2 tons of ore per fathom. We have two men stoping in sundry places where it is yielding 14 ton. We have four men stoping the south lode in the 60, where it is yielding 14 ton. We have four men stoping in sundry places where it is yielding 15 ton. We have four men stoping in sundry places where it is yielding 15 ton. We have four men at 3%; it measured 6 fms. 9 ft. 3 in., 4 ft. 11 in., yielding 2 tons of ore per fathom. Four trib

GLENROY.—R. Rowe, Feb. 15: I have made a minute examination again today of the lode in the north adit, and am able to confirm fully what I reported on
the 13th. There is a strong and well-defined lode in the end, which we shall commence to drive on Monday. The end is only now in a position to enter rising
ground, and has before it points likely to open out important discoveries.

GLENROY.—R. Rowe, Feb. 20: I am unable to report anything specially new
after being underground this afternoon. We are still breaking good blende in the
40 stopes. The lode in the 50 rise is wide—from 3 to 4 ft.—mixed throughout
with blende. The 50 level going off in the side is still in disordered ground, and
the lode divided into ribs and branches of blende. The 50 cross-cut is without
change. In the 25 cross-cut east we typed a few days ago quite a flood of water,
and have since intersected a branch about 6 in. wide, containing a good deal of
sulphur. There is still a good deal of water coming from the end, which is in
3¼ fms., and the lode we have lu view to intersect we calculate to be about 2 fms.
further ahead. We resumed driving the adit end north yesterday, and this afterneon broke from the lode some highly promising stuff, containing blende, copper, and lead. per, and lead.
GORSEDD AND MERLLYN.-W. Edwards, Feb. 22: In No. 1 sump, below

GORSEDD AND MERCLIAN.—W. Edwards, reb. 22: In No. 1 sump, below the adit level, the lode is looking extremely satisfactory; nine men this week, in opening upon the vein, have sent to surface from 4 to 5 tons of ore. In the western samp, or No. 2, the vein is improving; there is now more than 1ft, wide of quite solid ore. In the sinking of the shaft the lode contains strong blende, and is going down almost perpendicularly, so that I am more convinced than ever that our great lode is on the south side of the pit. Should this prove to be the case, our prospects should be magnificent.—Dressing-Floor: I think we shall have more than the 40 tons promised ready for sale at the Holywell ticketing, which will be a fair commencement, and will be increased as the mine is developed.

fair commencement, and will be increased as the mine is developed.

GREAT DYLIFFE.—E. Rogers, Feb. 21: Dyliffe Lode: Atthe 132, east and west, we are driving by the side of the lode, and shall commence stripping in a day or we are also as the lode is worth 104, per fathom. In the rise in the back of the 105 is lode is worth 204, per fathom. In the rise in the back of the 105 is lode is worth 204, per fathom. At the 60 we are cross-cutting north. I except there is another part of the lode standing in that direction. At the 40 driving is the lode is 1 ft. wide, and unproductive. The winze in the bottom of this vel is communicated to the old workings below.—Llechwedd-du Lode: At the 55 the tributers are desuing the lode in the back of the level in order to strip it own with greater dispatch. We have sampled 60 tons of lead ore to-day for sale the 25th inst.

inst. HURTH.-William Vipond, Feb. 15: The two ends on the east and

ood discoveries will be made as the workings progress in this direction.

HOLMBUSH.—H. Bennett, Feb. 22: All our tutwork bargains remain much the ame as when last reported on. I hope to finish clearing the 60, on the lead lode, in the course of a few days. Our stopes east and west of Miler's shaft are looking well for arsenical mundic, and are yielding some good copper ore. The stopes vest of Lord's shaft are yielding good quality arsenical mundic. We shall commone to lay down the skip road in this shaft in the course of a few days. The arpenters are at present engaged preparing the poppet heads. All our surface core is being pushed on with vigour. We have completed the creation of sheds yer our dressing-floors, and shall now be enabled to continue the dressing un-

The stopes and pitches throughout the mine are turning out their usual quantities of ore.

MEDLYN MOOR.—Joseph Prisk, Charles Rowe, Feb. 22: At our monthly setting on Saturday last, Feb. 17, we set the following bargains:—No. 1, South Lode: The 27 to drive west of engine-shaft, by four men, at 63. Per fathom. Lode: The 27 to drive west of engine-shaft, by four men, at 64. Per fathom worth 54. Per fathom. A rise in the back of this level, by two men, at 44. Per fm, lode rather small, but improving as we open on it. The 17 to drive west of root shaft, by four men, at 74.; lode 3 ft. wide, worth 84. Per fathom.—No. 1 North Lode: The 27 to drive west of cross-cell, by four men, at 64. Per fathom.—No. 2 North Lode: The 27 to drive west of cross-cell, by four men, at 64. Per fathom; lode a little disordered for the present, the cross-cell, by six men, at 74. Per fathom; lode 4 ft. wide, worth 184. Per fathom. A rise in the back of this level, by six men, at 64. Per fathom; lode worth 54. Per fathom. No. 2 stope in back of the 17, by four men, at 35s. Per fathom; lode worth 54. Per fathom. Three tribute pitch by four men, at 35s. Per fathom; lode worth 54. Per fathom. Three tribute pitch to eight men, in tributes as follows—13s. 4d., 12s., and 6s. 3d. in 4. The mis of the present of

to eight men, in tributes as follows—13s. 4d., 12s., and us. od. 10 M. The miss generally has improved since the meeting. We are doing our ulmost to effect communication between the 27 and 17 km. levels, after which we shall increase the natural states of the skip shaft, and find it to be about 3 ft. wide, of a very promising appearance, and producing good stones of lead ore, blende, and munici. We propose driving south on the course of it, as we expect to meet with the lode in that direction. The lode in the 50, west of shaft, is improving, now worth 2 tous of each great from the same as last repried, the ground is very easy for driving, and the lode is worth 4 tous of ore per fathom. The lode in the 50, west of shaft, is much the same as last repried, the ground is very easy for driving, and the lode is worth 4 tous of ore per fathom. The rise in the back of this level is up 6½ fathoms, and the lode is worth 3 toss of ore per fathom. The winze sinking in the bottom of this level is down I fathora, and worth 3 tons of ore per fathom. The rise in the back of the 7s, west of shaft, is swith 4 tons of ore per fathom. The rise in the back of the 7s, west of shaft, is swith 4 tons of ore per fathom. The rise in the back of the 7s, west of shaft, is swith 4 tons of ore per fathom. The lode in the 80, west of shaft, is still worth 3½ tons of ore per fathom. We are making good progress in driving the cross-cut south of Gundry's shaft. The clack failed yesterday (conruing in the 86 farwing lift in the old engine shaft, and the water rose to the 7s fm. level; but we have sent down a drop clack, and expect to be in fork again to the 85 in the source of few days. We sampled yesterday (computed) 333 tons of copper orc.

MONYDD GORDDU—R. Rowse, Feb. 21: I have no change to report this weak. NEW CHIVERTON.—J. Trewattha, Feb. 2): Although the mine is not looking so well as one would wish, it is, nevertheless, satisfactory to know that we have a large well-defined lode embedded in a very congenial stratum for the prolec ion of

the new lode, we discovered another lode, and have opened on it about 3 ft. We find it to contain tin, but at present there is not enough discovered on it to ascetain its value. The lode is of a very kindly appearance, and in a good chance of mineral bearing ground. I will let you know in a day or two how it continues to

open up.

NEW SOUTH MERLLYN.—R. Rowlands, Feb. 22: I am glad to say that the NEW South rise, is improving. We are getting therefrom rocks of or

open up.

NEW SOUTH MERLLYN.—R. Rowlands, Feb. 22: I am glad to say that the 80 yard level, south rise, is improving. We are getting therefron rocks of eve weighing ½ cwt., and we must expect a great deposit near us.—Dressing Floor: We are getting on very well with a parcel of lead for next toketing.

NEW TYLLWYD.—J. Paull, Feb. 22: The lode in the 30, west of the cross-cut, on south lode, is fully 2 ft. wide, composed of spar, clay-slate, and a little lead ore, but not enough to value; both the lode and clay-slate are of a better appearance for the last 3 or 4 ft., and we expect an improvement at this point soon. The lode in the 30, east of the cross-cut, on the south lode, is 2 ft. 6 in. wide, intermixed with ore throughout. The 20 east, on middle lode, has reached the point in 1 spots of a few weeks ago, and the lode as come in as mentioned, being 1 ft. 6 in. wide, with its usual underlie south, containing spar, carbonate of lime, clay-slate, and spots of lead ore. I may here remark that only one shot has been fired in it, and that in the roof of the level, and the bottom will take some stems to reach the ead lode; we shall be able to say more about it in our next report. The wize is just as usual, yielding about 15 cwts. of lead ore per fathorn. The tribute pitch in the wince a the mouth of the level is not so good as last week, the lode being crossed by a soft joint. The pitch over the deep adit, on the middle lode, is much as last report do no. During the storm on Monday night last the wint blew off a part of the roof of our crusher house, which must be repaired immediately, as we shall soon have to crush night and day. All the machinery is in good order, NORTH LaXEY.—John Sowden, Feb. 20: The shaftmen are putting down a new sinking litt and the standing lift in the eistern; consequently there is now worth 15 cwts. of lead per fathorn. The tope in the roof of line ground, and the lode has improved very much, and continues to improve in dephi; now worth 15 cwts, of lead per fathorn. The stope in the roof o

for the washing thors, but it is not out of the influence of the slide yet. There not any change in the 27 cross-cut.

OLD TREBURGETT.—W. Hancock, W. T. Bryant, Feb. 21: The lode in the 28 countries worth about 5t, per fathom for sliver lead: ground still favourable in the 80 south it is worth 5t per fathom. No. I winze under this level is a pended and the men put in the back of the 102 with two of the end men to in against it. In Massey's shaft and rise against it ground much easier, water near all cut down, and good progress is being made. Messrs, Nevell, Pruce, and to purce of ors will all be delivered at Wadebridge to morrow. Will send details report next week. cock, W. T. Bryant, Feb. 21: The lode in the

port next week, PANDGRA.—H. Nottingham, Feb. 22: New Lode: The 33 end, going south PANDORA.—If. Nottingham, Feb. 22: New Lode: The 33 em hows a little improvement. We have broken some nice stones of end to-day, and the indications are favourable for more. The creat from Pyne's shaft is progressing well. In the 23 end south we able to do much since last report. The stripping of the lode down, able to do much since last report. The stripping of the lode down, is producing so much stuff which has all to go through the grate it been able to clear the stuff. We are stripping the lode at the 25 which is producing about 1½ ton of lead and 1 ton of blende per fact of lode. Stope over this level, south of rise, is worth ½ ton of led blende per fathom.—Goddard's Lode: The 23 end south is yield but not enough to value. Stope north of No. 3 winze worth 1 to 15 ext. of blende per fathom. The 13 fm. level, driving south, is we producing a little ore, but not enough to value. Btope north of No. 5 ton of lead and 12 cats, of blende per fathom. This stope looks did at the winze, and I am inclined to this kine ore has taken north here, instead of going down, as we expected, in the winze, so the south ground is whole from this to the 23. We have communic No.5 shart, and shall now resume the sinking of this shaft for Nothing has been done in the stope under this level since my last, men or surface, rising and levelling the banks of the reservoirs, a what damage has been done by the floods and storms.—Surface:

list reported. The new pinnon wheel and other great below pumping engine have arrived here to day; and we hope I some time to night. It will be our setting day on Saturde PATELEY BRIDGE—C. Williams, Feb. 21: The 30 es gressing favourably, and the vein in the forebreast is of ter, being over 6 ft; in width, intermixed with carbonate ore; and, from all appearance, I believe that we are be posit of metal. The 30 vext, on the same vein, is become the vein is opening out to a great width, so much so that considerable portion standing to the south of the level:

FEB. on Big Ore

1877.

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month found whole there g velo, there d, and which in lay aying this

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Il the ve are e are e are ming east,

on Big Ore lode, is 1½ ft. wide, of lime and lead ore, worth of the latter 1½ ton per fathom. The run of lead gone down in the 120 appears to be coming into this per fathom. The run of lead gone down in the 120 appears to be coming into this per fathom. The run of lead gone down in the 120 appears to be coming into this per fathom, and producing and the sextended 2 fms.; not having discovered anything very profitable diving south is extended 2 fms.; not having discovered anything very profitable gif of the present anspended. The lode in the 120 east is 1 ft. wide, containing is for the present anspended. The lode in the 120 east is 1 ft. wide, containing is for the present the lode is small, and producing no lead to value. The cross-cut tis keed west the lode is small, and producing no lead to value. The cross-cut tis keed west the lode is small, and producing no lead to value. The cross-cut tis keed west the lode is small, and producing no lead to value. The cross-cut is keed west the lode is small, and producing for an improvement. High the winze sinking below this level is 2½ ft. wide, and worth 2 tons per fathom, and promising for an improvement. It is wide, worth 1½ ton per fathom, and No. 3 worth 2 tons per fathom.—Tribute; No. 2 stopp 2½ tons per fathom, and No. 3 worth 2 tons per fathom.—Tribute; No. 2 stopp 2½ tons per fathom, and No. 3 worth 2 tons per fathom.—Tribute; No. 2 stopp 2½ tons per fathom, and No. 3 worth 2 tons per fathom.—Tribute; No. 2 stopp 2 ½ tons per fathom, and No. 3 worth 2 tons per fathom, and when the second of the weather of the second of the north of each per fathom, and the second of the second of the weather decreases very slowly. The lode winter and the second of the weather decreases very slowly. The lode winter and with the present state of the weather decreases very slowly. The lode winter and with the present state of the weather decreases very slowly. The lode winter and the mine there are five pitches yielding fair quantities of lead ore. We see father to remark for th

OF WALES.-J. Andrews, J. Pryor, Feb. 20: The lode in the 55 west composed of quartz, capel, mundic, and yields stones of good re. We continue to make good progress in sluking the winze t being in the cross-course there is no change in the character of ode in the 45 west is 3 ft. wide, worth 10% per fathom, and is now

the 55, but being in the cross-course; there is no change in the character of a The lode in the 45 west is 3 ft, wide, worth 104, per fathom, and is now gout profitable ground.

(AN GRAVELS.—A. Waters, Feb. 22: The 166, north of shaft, is yielding ones of lead ore, and improving gradually. The 166 south is now worth per fathom, with every sign of further improvement. We are preparing a winze below the 95 fm. level, 8 fms. north of the shart, where there is a de. The new shaftmen are dividing and casing the shaft from the 96 fm. ownwards. The 95, south of said new engine shaft, is still in the twitch, ist soon get into a wider and richer lode. The 80, south of Wilk's where, of shaft, is worth 2 tons per fathom. The 65 south, on the footwall portion, hom. In the 50 south the lode is getting wider and more promising than. There is a rich run of ore in the 55, 17 fms. south of the said 50 fathou d. Some of the stopes in the 95, north of caunter lode, have failed off in tely, owing to twitches in the lode.

PATRICK—W. Francis, Feb. 21. The 120 yard cross-cut progress-s under stavourable features. The cross course is still wide, with good wallsground, and lead ore continually met with. The 65 yard cross-cut is alrog ground, and lead ore continually met with. The 65 yard cross-cut is alrog ground, and lead ore continually met with. The 65 yard cross-cut is alrog ground (at 50s, per fathom, including all cost), and in the finest bearing neasures, in which the old Halkyn Mines proved so productive as to return of the ARN BREA.—Wm. Rich James Knotwell, Feb. 20: The mine is frained to the bottom, and the driving of the 164 west resumed. The ent of the corrections of the statification.

tors.

III CONDURROW.—Wrn. Rich, Wrn. Williams, H. Abraham, Feb. 21: We carly drained the 93 last week when the connection caps at the 40 broke, nearly the engine had to be idle s-veral hours. We have put in a new and ere set of caps, and are again forking the mine very well. There is nothing ew in the underground operations since our last report. The lode in the 10 at north is not yet fully cut through, but so far as can be seen it is looking all worth 15t, per fathom. The lode is standing whole to surface over the love!

level.

TH ROMAN GRAVELS.—J. W. Powning, Feb. 22: Shelfield: The engines now 4 fms. 3 ft. below the 40. We calculate to reach the 45 by the end of eek. There is no change in the 20 cross out. The engine and everything occion there with is working well.

TH TOLCARNE.—Wm. Rich, Wm. Hambly, Feb. 21: The 50 east, on stode, is without material alteration since our report of last week. It is a masterly lode, and yields occasional stones of tin. The adit east produces and good stones of copper. We are preparing to fix rods so as to drain the lode below the adit.

and good stones of copper. We are preparing to fix rods so as to drain the ode below the adit.

If WHEAL FRANCES.—A.T. James, Feb. 22: The water is now drained it, and we hope by this day week to see the 154 dry. The engine is now about 9 ft. per day, but when the flat-rods are connected with Pascocis we hope to fork 5 fins, per day. The coming water is considerably abated. CERVILLE.—Arthur Waters, Feb. 22: Watson's shaft is now 5 fathous et so. The 180 cast continues to open out a strong rich lode, worth 752. on. The 180, west of shaft (the two ends are now 17 fins, apart), is worth fathoun, and everything indicating further improvement; the lode is very 1 se, therefore, are expecting to cut into a cavity and great bunch of ore, extepse in back of the 180, east and west of shaft cross-cut, are worth 752 tons. The 187 cast is in a lode 3 ft. wide, yielding good stones of lead. stopes in the 167, east and west of No. 1 winze, are worth together 7 tons, conto without material change.

DALE.—Thoms Watson, Feb. 16; North End Workings: No. 1 stope is

opes, one cast and the other west of No. I winze, are worth together 7 tonsopes, one cast and the other west of No. 2 winze, are worth together 5 tonsopes, one cast and the other west of No. 2 winze, are worth together 5 tonsopes, one cast and the other west of No. 2 winze, are worth together 5 tonsopes, the state of the produce, and the state of the state of

WEST MARIA AND FORTESCUE CONSOLS.—Wm. Skewis, Feb. 22: North Lode: In the 71 west the lode is worth 104, per fathom. The No. 1 winze is communicated with the rise in the back of the \$3, and the men are put to stope the western end of the winze in the bottom of the 71, where the lode is worth 134 per fathom. In and in the stopes in the back of this level the lode is worth on an average 154, per fathom. You will be pleased to know that we started the boring machine on Saturday last, and it has since been working satisfactorily, especially so as our men have never had any experience with a boring machine, or even seen one before. We shall soon be able to give detailed results.

WEST MILWR.—W. Francis, Feb. 21: The 70 yards cross-cut, south from West Meadow shaft, still continues hard for driving; the dip and bearing rock are, however, all that could be desired for lead bearing east and west veins when cut, and I expect we shall soon have the main one, for which chiefly the cross-cut has been carried on. The vein in the rise is well defined, and fully 2 ft. wide, having continual chances of opening into a good course of orc.

WEST TANKERVILLE.—A. Waters, Feb. 22: The 75 cross out, going west out of the north level, is now into a small side branch or lode, which is yielding good ore stuff. We intend extending the cross-cut still further, expecting to find more lode in the said direction. The 75, south of shaft, has not improved of late, the lode still being narrow. The winze below the 63, south of shaft, is spening out good ground for stopes. The 63 south is improving again. The stopes as for some time past.

WEST TRESAVEAN (Gwennap).—O. Stephens, Feb. 22: We have had a great

il ore stuff. We intend extending the cross cut still further, expecting to find more lode in the said direction. The 75, south of shaft, has not improved of late, the lode still being narrow. The winze below the 63, south of shaft, is a pening out good ground for stopes. The 63 south is improving again. The stopes as for some time past.

WEST TRESAVEAN (Gwennap).—G. Stephens, Feb. 22: We have had a great improvement in Williams's lode at Michell's shaft; the lode is still increasing in value for the and copper, and several men now working in the mine want to take the state of the st

in the winze sinking by the side of the love bears in the winze sinking by the side of the love bears are poor. The lode in the winze sinking below the 43 is 5 ft. wide, worth 150, per fathorm.

WHEAL KITTY (8t. Agnes), -8tephen Davey, R. Harris, Feb. 17: We have no change worthy of especial remark in any part of the mine during the week.

WHEAT, NEWTON.—H. Bennett, Feb. 22: The 40, east of Cook's shaft, continues to look well for silver, and there is a quantity of water still issuing from the end. All our other tutwork and tribute bargains remain without any material alteration since last reported on. We have despatched our first parcel of silver ore to-day. It consisted of seven casks, containing about 1 ton.

WHITE CLIFF.—John Jones, Feb. 22: Since I wrote my last we have combleted the setting of the pumps at the Gorlan shaft, which is now clear of water, and I have set tix men to stope the ground, which I am happy to say is very rich for lead, fully realising the expectations I had of it, but I shall be in a better position to say more about it in my next.—Allwen: The number of men at Gorlan being short, I had to remove the two men who drove the level from the bottom of No. 2 sump to Gorlan for a time, therefore I have nothing fresh to report in that portion, but we continue the sinking of No. 2 sump, where the lead improves as we slok. The stoping at the south end continues to yield lead in about the same quantities.—Washing-Floors: The work here goes on as well as possible. Our third lot of lead is being sampled.

THE WEEK.

THE WEEK.

Saturday, Feb. 17.—National Discount shares were done to day at 11—a higher price than has been reached for a long time past. Independently of the strength ad led by the Messrs. Camilife, this establishment has long been one of the first establishments in the City. At the present moment, and the the majority of the banks, it is allowing it per cent. on deposits at call. This rate, by the way, on 500. (the lowest sum received by the National Discount Company) amounts in a month to no less than 7s. 6d., or a trifle over. Eberhardt shares again showed strength, and rose to 84. On the other hand, L.X.L. declined to 15s., and Don Fedro to 8s. 9d. In railways the downward tendency in North British again manifested itself, and the stock closed no better than 104. Russian, 1873, 31 to \$1.9. Egyptian, 1873, 45 \(\frac{1}{2}\) to 49. National Safe shares were offered at 20s., 7t. paid. Native Guano declined to 2\(\frac{1}{2}\).

MONDAY.—A rumour was current to-day that Sir Edward Watkin, finding himself in an hopeless minority, would leave the Great Extern, and the stock in consequence fell \(\frac{1}{2}\), to 49. A large business was done in North British, which from 104 tonehed 103, then quickly recovered to 105, and finally closed 104\(\frac{1}{2}\) to 104\(\frac{1}{2}\). It is at Glasgow where the moves are initiated, and careful people would do well to leave them to themselves, as they are able to make the best use of this notorious stock. Great Western rose to 105\(\frac{1}{2}\), but Caledonian was comparatively neglected at 124\(\frac{1}{2}\). In the mining market the principal feature was the continued down ward tendency of St. John del Rey stock, which to day dropped sheer away to 25 thingston Consols were quoted \(\frac{1}{2}\) to 12 t

has been driven further and with better results, but we are pleased to say the water has greatly fallen off; the engine is now working about six strokes per minute. We estimate our next 12 weeks cost, from Feb. 10 to May 5, to be about 60, per month, and our returns to be quite 8 tons of tin per month, equal to 3204, besides this we shall have a little copper ore. We sold copper in December of the take of 51.6, and again on the lat instant 33. The mine is yielding larger returns with less cost than it has done, and with a little better price for tin would be leave 152. Holder, and again on the lat instant 33. The mine is yielding larger returns with less cost than it has done, and with a little better price for tin would be leaved of 40.4, and again on the lat instant 33. The mine is yielding larger returns with less cost than it has done, and with a little better price for tin would be leaved of 41.4, and again on the lat instant 33. The mine is yielding larger returns with less cost than it has done, and with a little better price for tin would be leaved of 51.4, and again on the lat instant shall be also fast. The line of the present day. All our nachinery is all and the load does not underlie so fast as the south one, and although the two are only 12 ft. apart at surface they are, I fancy, 15 or 15 ft. at our 20 fm. level; at all this lode does not underlie so fast as the south one, and although the two are only 12 ft. apart at surface they are, I fancy, 15 or 15 ft. at our 20 fm. level; at all this lode does not underlie so fast as the south one, and although the two are only 12 ft. apart at surface they are, I fancy, 15 or 15 ft. at our 20 fm. level; at all the lode does not underlie so fast as the south one, and although the two are only 12 ft. apart at surface they are, I fancy, 15 or 15 ft. at our 20 fm. level; at all the lode does not underlie so fast as the south one, and although the two are only 12 ft. apart at surface they are, I fancy, 15 or 15 ft. at our 20 fm. level; at all the lode does not un

find, cannot be sold. The Cadiz Company had even larger capital, the amount with debeutures not being less than 1,000,000. capital. There is no market for the shares. Contrasted with these we have East London, 1004. paid, worth 1552.; Grand Junction, 504. paid, selling for 754.; West Middlesex, with 614. paid, worth 154. Grand Junction, 504. paid, selling for 754.; West Middlesex, with 614. paid, worth 154. FRIDAY (opening).—The markets have rather a firm appearance this morning. Consols are 99, and a rise of 108. In North British has taken place, to 104½. Great Western remains 104½ to 104½, the 4½ dividend having had remarkably little effect on the stock. Midland firm at 129, and Caledonian at 123½. There appears to be some buying of Egyptian, Russian, and Turkish bonds, but so far prices are unchanged from last night. Eberhardt steady at 8½; is at silver valued at 50004. has just been received. Don Pedro, 9s. to 11s.; East Van, 7 to 7%; Pennerley, 14s. to 16s.; Richimond, 6½ to 7; Exchequer dull at 15g. Chapel House are stronger, 3b. being bid, without leading to business. — Two o Clock.—Midland continues in demand, and is now 129½; it is believed it will be found on Monday to have been oversold. Independent of that, as I have before stated, it is still by a long way the cheapeast in the market. North British, 104½ to 1045; Cleichnian, 123½ to 123½; Great Western, 1043½ to 1049; Great Eastern, 40½ to 40½; Berwick, 156½ to 167; Brighton, A, 103½ to 1045; Sheffield, 72%; to 7252.—Four o Clock.—Midland is now quoted 129½ to 129½; the stock will be quoted on and after Wednesday next ex div, which will make a difference of 2%. Other railway stocks are also higher, and the market closes with a firm appearance. North British, 104½ to 104½, a rise of 11. on the day; Caledonion, 123½ to 725. Worth British, 104½ to 104½, a rise of 11. on the day; Caledonion, 123½ to 124; Berwick, 150½ to 167½; Brighton, A, 103½ to 104; Berkick, 150½ to 147½ to 725. North British, 104½ to 104%; Great Batter are quoted 1½ to 1½.

THE SCOTCH MINING SHARE MARKET-WEEKLY REPORT AND LIST OF PRICES.

During the past week the market has again been very idle, and

During the past week the market has again been very idle, and almost featureless.

In shares of iron and coal concerns Menkland (preference) have fallen 20s, per share, Ebbw Vale 5s, and Monkland 4s, 61. Benhar (new) and Marbella show trilling advances of is, 31, and 6d, respectively. Chapel House are better, at 60s, to 70s. Bolckow, Vanghan, and Co. recommend dividends of 41s, 6d, on A shares, and of 30s, on B shares, notwithstanding the A shares have fallen 7s, 6d, each on the week. Scottish Australian have been dealt in to some extent about 40s. Spon Lane are in better request; the meeting must, therefore, have given satisfaction.

In shares of foreign copper concerns Panulcillo and Thar-is (new) are each 5s, lower; Tharsis, 3s, 9d; Yorke Peninsula (ordinary), 1s, 9d.; and Canadian Pyrites, 1s, 6d. Yorke Peninsula (preference) are steady at 20s, to 25s.

are steady at 20s. to 25s.

are steady at 20s. to 25s.

In shares of home mines any alterations are to lower prices, but the market is utterly neglected. Bampfylle offer at 10s.; East Van, 7½ to 7½; Lea thills, 6½ to 6½; North Laxey, 17s. to 19s.; Parys Mourtain, 10s. to 12s.; Penstruthal, 11s. to 12s.; Pennerley, 14s. to 16s.; South Condurrow, 6 to 6½; Tankerville, 8½ to 8½; Van Consols, 40s. to 45s.; and West Tankerville, 32s. 64. to 37s. 64.

In shares of gold and silver mines, Flag-taif have advanced 5s. and Richmond 2s. 63.; but Last Change are reduced for The Pist.

and Richmond 2s. 6d.; but Last Chance are reduced 5s. The Richmond run this week is \$55.000. Emma are 7s. 6d. to 10s.; I.X.L., 16s., buyers; Pestaren United (Gold), 3s. 9d.; Sauth Aurora, 6s. 3d., buyers.

In shares of oil concerns, Uphall have fallen 11s. 3d, Young's

In shares of oil concerns, Uphall have fallen 11s. 3d., Young's Paraffli, 5s., and Oakbank (new) 6d.

In shares of miscellaneous companies prices are steady, but unaltered. The Lancaster Wagon Company recomment a divident of 5 per cent. for the year 1876. Earle's Shiphailding, 21½ dis.; Lawe's Chemical, 6½ to 7½; Milner's Safe, 10; Phospho-Gueno, 11 to 11½. Safioined are this week's quotations, &c., of mining and metal shares quoted on the Scotch Stock Exchanges:—

| 1 | the Bc | | | CK | | | | | |
|-----|--------|-------|------|-------|--------|-------|--------|--|-----------|
| 1 | Ca | pit | tal. | | | | nds. | | |
| 1 | | | | | Rate | per | cent | Description of shares. | |
| 1 | Per | | Paid | | | | nm. | | Last |
| 1 | share. | | up. | | | | Last. | COAL, IRON, STEEL. | price. |
| | £10 | | 4:6 | | | | | Arniston Coal (Limited) | 71/8 |
| : | 10 | | 10 | | | 8 | 6 | Benhar Coal (Limited) | 934 |
| : | 20 | | 8 | | 9 | | 6 | Ditto | |
| 1 | 100 | | 45 | | | 5 1 | 800.11 | Bolekow, Vaughan, and Co. (Lim.)A. | |
| . 1 | | *** | | *** | | | 0304 | Colorado, Vaugnan, and Co. (Lim.)A. | 5256 |
| | 10 | *** | 10 | *** | 10 | | 10 | Cairntable Gas Coal (Limited) | 81/2 |
| Н | 10 | *** | 10 | | nil | | 4 | Chillington Iron (Limited) | |
| П | 32 | | 29 | | nil | | | . Ebbw Vale Steel, Iron, and Coal (Lim.) | 916 |
| : | 10 | 200 | 5 | *** | nil | | nil . | Fife Coal (Limited) | 50s. |
| 1 | 10 | *** | 10 | *** | - | | - | Glasgow Port Washington Iron & Coal(L) | 50s. |
| ч | 10 | | 10 | | - | | | Ditto Prepaid | 50s. |
| - 1 | 10 | | 10 | *** | - | *** | | Lochore and Capledrae (Limited) | 61/4 |
|) | 10 | *** | 10 | | nil | | | Marbella Iron Ore (Limited) | 779 64 |
| | 10 | *** | 10 | | mil | | | Monkland Iron and Coal (Limited) | 55s. |
| - | 10 | | 10 | | 8 | | | Ditto Guaranteed Preference | 5 |
| | 100 | *** | | *** | nil | | | | |
| 1 | | | | *** | | | | Nant-y-Glo & Blaina Ironworks pref. (L) | 201/2 |
| | 6 | | | á | nil | | | Omoa and Cleland Iron and Coal (Lim.). | 35s. |
| - | 1 | | 1 | | 125 | 2 | | Scottish Australian Mining (Limited) | 406. |
| | 1 | *** | ₽6. | | 12% | 2 | | Ditto New | 10s. |
| | Stock | | 103 | 189 | ő | *** | nil | Shotts Iron | 100 |
| 9 | | | | | | | COL | PPER, SULPHUR, TIN. | |
| 1 | | | 4 | | | | CO | Conding Control (Linited) | 17- 01 |
| | 4 | 000 | | | - | *** | | Canadian Copper Pyrites (Limited) | |
| 1 | 10 | | | *** | 208 | | 208 | Cape Copper (Limited) | 40 |
| ť | 1 | | 1 | | 15 | *** | _ | Glasgow Caradon Copper Mining (Lim.). Ditto New | 249. |
| ŧ | 1 | | 15s. | | 15 | | - | Ditto New | 164. 34. |
| 8 | 10 | | 9% | í | nil | *** | nil. | Huntington Copper and Sulphur (Lim.). | 12s. |
| е | 258. | | 238. | *** | - | | _ | Kapunda Mining (Limited) | 6d. |
| r | 4 | | | *** | - | *** | - | Panulcillo Copper (Limited) | 308. |
| • | 10 | | 0.0 | | 61 | 100 | 61 | Rio Tinto (Limited) | |
| | 20 | | 00 | | - | | 7 | Ditto, 7 per cent. Mortgage Bonds | 1314 |
| | 100 | | 900 | | _ | | | Do . 5 p.ct. Mor. Deb. (Sp.Con. Eds.) | 64 |
| | 100 | * * * | | *** | nil | *** | | Russian Copper (Limited) | 459. |
| | | | 9.0 | *** | 25 | *** | | There is Copper (Limited) | 10/11-7 |
| | 10 | | | | | | 227 | Tharsis Copper and Sulphur (Limited) | 150 118 9 |
| r | 10 | | | | 25 | * 0.0 | | Ditto New | |
| ì | 1 | *** | | | _ | *** | - | Yorke Peninsula Mining (Limited) | |
| t | 1 | | 1 | | _ | | _ | Ditto, 15 per cent. Guaranteed Pref | 21s. 3d. |
| | 1 | | | | | | | GOLD, SILVER. | |
| e | 1 | | 1 | | - | | 5 | Australian Mines Investment (Limited). | 8s. 9d. |
| | | *** | | * # 0 | | | | Emma Silver Mining (Limited) | |
| h | 20 | *** | | | _ | | | | |
| 3 | 10 | *** | | * 0 0 | _ | *** | - | Flagstaff Silver Mining (Limited) | |
| U | 5 | *** | 5 | | - | 20 | | Last Chance Silver Mining (Limited) | 10s. |
| ì | 5 | -00 | | *** | 18. 60 | 1, | 15. 60 | Richmond Mining (Limited) | 67% |
| | | | | | | | | OIL. | |
| 0 | 10 | | 7 | | 5 | *** | 6 | Dalmeny Oil (Limited) | 92, 19, |
| | 1 | | | | | *** | 73 | 4 Oakbank Oil (Limi ed) | 54s. 6d. |
| - | i | *** | | | | | 7 | 4 . Oakbank Oil (Limi ed) | 12s. 6d |
| | | 000 | | | _ | | 67.0 | Uphall Mineral Oil (Limited) "A" | 10/ 10 24 |
| 1 | 10 | - * * | 9.0 | | _ | *** | | Ditto "B" Deferred | 10 19 00 |
| | 10 | 0.90 | | | - | | | | |
| i | 10 | *** | 83 | á | 5 | | 9 | Young's Parassin Light & Mineral Oil (L) | 14% |
| | | | | | | | | MISCELLANEOUS. | |
| 9 | 50 | | 25 | | 10 | | 5 | London and Glasgow Engineering & Iron | |
| d | 1 00 | *** | 40 | 000 | 20 | *** | | Shipbuilding (Limited) | |
| 1- | | | 241 | , | | | | Danuelan Vitrata (Limited) | 111/ |
| ١. | 20 | | 9.0 | 8 | | | -0 | Peruvian Nitrate (Limited) | 1117 |
| | 10 | | 10 | | 6 | | 6 | Ditto New | 670 63 |
| f | 1 10 | | 4 | | 6 | | 6 | Ditto New | 01s. od. |
| 0 | | | | | 1] | inte | rim. | Per share. | |
| a | | | 1 | Last | day | for | this | account, Feb. 24; settling day, Feb. 28. | |

Note.—The above lists of mines and auxiliary associations are as full as can be ascertained, Scotch companies only being inserted, or those in which Scotch investors are interested. In the event of any being omitted, and parties desiring a quotation for them and such information as can be ascertained from time to time to be inserted in theselists, they will be good enough to communicate the name of the company, with any other particulars as full as possible.

J. GRANT MACLEAN, Stock and Share Broker.
Post Office Buildings, Stirling, Feb. 22.

Petitions have been presented to the High Court of Justice for the inding up of the Electric Power Company, and the Lindridge Colliery Company.

With this week's Journal a SUPPLEMENTAL SHEET is given, With this week's Journal a SUPPLEMENTAL SHEET is given, which contains: Original Correspondence. Electricity for Blasting and Signalling in Mines; Colliery Management and Dividends; The Late Mine Act, and Colliery Manageres: Spontaneous Combustion and Explosion on Board of Coal-carrying Ships—Patent Fuel (A. Vassard); Mining Explosions, and their Cost—Organisation of the Minin Interest—Richmond Mining Company—An Enigma—the Emma Mine Viewberg Copper Mining Company—Cardiganshire Mine—A.D. 187.—No. IV. Abasion Francis); Dartmoor—Mineral Deposits and Railway—No. II.; Cornish Mining (C. Bawden); the Mining Interests of Cornwall (R. Tredinnick); Low-Prieed Mining Shares, and Hints to Investor (John R. Pike); Two Neglected Securities; Science in its Application to Mining (R. Knapp); Outlines of Gology—Barnard's Promoter's Company, Limited—Pedn an-drea Mines, and Mr. Granville Sharp (W. Tregay)—New Stone and Ore Breaker—Registrio of New Companies—Horseign Mines—Almada and Tririto Consolidated Silver Mining Company—American Handbook of Finance—Foreign Mining and Metallurgy—Meetings of Aruba Island, English and Australian, Emma, Flagstaff, Wheal Grenville Botallack, West Tolgus, Phosphor Bronze, &c.

TO THE METAL TRADE

FOR COPPER, TIN, LEAD, &c., apply to-MESSES, PELLY, BOYLE, AND CO., SWORN METAL BROKERS, ALLHALLOWS CHAMBERS, LOMBARD STREET, LONDON. (ESTABLISHED 1849.)

The Mining Market: Brices of Metals, Ores, &c.

| - | - |
|---|---------------------------------------|
| META | L MARKET-LONDON, FEB. 23, 1877. |
| IRON. £ s. d. £ s. d | TIN. £ s. d. £ s. d |
| Pig. gars, f.o.b., Clyde, 2 15 0-2 15 714 | English, ingot, f.o.b 75 0 0 76 0 0 |
| Scotch, all No. 1 2 17 6- 3 6 0 | hars 76 0 0- 77 0 0 |
| Bara, Welsh, f.o.b, Wales 6 0 0 | refined 77 10 0- 78 0 0 |
| in London, 6 12 6 - 6 15 0 | Australian 71 0 0 |
| Stafford 7 15 0- 8 15 0 | Banca 74 0 0 |
| in Type or Tees 6 2 6- 6 7 0 | Straits 72 0 0 |
| Swedish, London 10 10 0-11 0 0 | COPPER. |
| Rails, Welsh, at works 5 10 0- | Tough cake and ingot. 76 0 0 |
| Railway chairs | Best selected 77 0 0 - 78 0 0 |
| spikes | Sheets and sheathing . 82 0 0- 84 0 0 |
| Bheets, Staff., in London 9 5 0- 9 10 0 | Fat Bottoms 86 0 0- 88 0 0 |
| Plates, Staff., in London 9 5 0 | Wallaroo 77 15 0 |
| Hoops, Staff 7 15 0- 8 15 0 | Burra, or P.C.C 77 0 0- 77 10 0 |
| Nail rods, Staff. in Lon. 7 10 0-8 2 6 | Other brands 76 0 0- 77 0 0 |
| STEEL. | Chili bars, g.o.b 70 10 0 |
| English, spring 14 0 0-23 0 0 | Риозрнов Ввомде. |
| cast 25 0 0-45 0 0 | |
| Swedish, keg17 0 0 | Bearing metal |
| fag. ham17 10 0-18 10 0 | |
| LEAD. | BRASS. |
| English, pig, common . 21 0 0-21 10 0 | Wire 81/2d. 91/2d. |
| | Tubes101/4 |
| W.B22 5 0- nom. | Sheets 9 |
| sheet and bar 22 10 0-22 12 6 | Yel, met, sheath, & sheets, 714 - 8 |
| pipe23 0 0 | Nails composition 8% - 9% |
| red | |
| white | TIN-PLATES.* per box. |
| patent shot24 10 0-24 15 0 | Charcoal, 1st quality 1 26-1 36 |
| Spanish | " 2nd quality 1 1 0- 1 1 6 |
| QUICKSILVER. | Coke, 1st quality 0 19 6 |
| Flasks of 75 lbs., ware. 7 15 0- | , 2nd quality 0 18 6 |
| | Blackper ton 16 0 0- 16 10 0 |
| SPELTER. | Canada, Staff. or Gla., 12 0 0-13 0 0 |
| Bilesian or Rhenish 20 15 0 | |
| English, Swansea 22 10 0 | Black Taggers, 450 of 1 30 0 0- |

24 10 0- 26 0 0 14 × 10 ... *At the works, 1s. to 1s. 6d. per box less for ordinary; 10s. per ton less for Canada; IX 6s. per box more than IC quoted above, and add 6s. for each X. Terne-plates 2s. per box below tin-plates of similar brands.

REMARKS .-- The aspect of our markets is unchanged, and business still continues on a limited scale, but it is hoped that the time is approaching when some improvement will be experienced. Before is approaching when some improvement will be experienced. Before another week the first spring month will have commenced, and orders for Canada and Russia, and other Northern ports, will probably be given out, the season being earlier this year than usual. The slackness of business in the past must be made up by greater activity in the future, and prices are now so reduced that they do not interfere with consumption. Money is cheap and abundant for all legitimate purposes, and as long as this is so other impediments will gradually succumb. Supply and demand must, however always regulate prices, but as there has already been a very great depreciation in consequence of the accumulation of stocks producers are not likely to go on adding much more to them, and, therefore, any increased demand would greatly relieve the markes, and speculators may, perhaps, soon begin to operate in anticipation of such an improvement. A little extra stock held over at low rates is not rery burdensome, and does not cost a great deal, besides, when prices have been lowered by reason of unusually heavy stocks, that is often considered the most oppertune moment to begin to effect forward contracts, simply because statistics are bad, the chances being more in favourofan amendment than otherwise. The elements for a good business still exist, which in time will fully mature, but the state of political affairs has shaken confidence, and east a temporary gloom over everything, and until some favourable turn is discernible in the East but few will have the courage to make a boil venture. At the same time holders are very reluctant to realise at current prices, as they leave a positive—in some instauces a considerable—lose.

The Emperor of Germany's speech, however, should produce an improved feeling, as it gives the conviction that peace will be preserved amongst the Christian Powers, and in the interests of commerce it is most expedient that peace should be maintained, and as regards Turkey, Servia, and Montenegro, the favourable negociations another week the first spring month will have commenced, and

prey to her bitt rest enemy. PPER.—The Wallaroo sale is over, and no good results has followed. In an ordinary way a sale of several hundred tons of copper is considered a good proof of the strength of the market, and would lowed. In an ordinary way a sale of several hundred tons of copper is considered a good proof of the strength of the market, and would impart a stronger tone, and there is very little doubt that if the sale had been effected privately, as formerly when higher prices were obtained, instead of publicly, as now adopted, when lower prices have to be taken, the market would have been benefited, and especially the price of Wallaroo, but under the new order of things a contrary effect has been produced. The object of these public sales, obubtless, is to bring in the public, and if they are he dwith that intention how signally they have failed, for the bidding is generally confined to a limited number, and chiefly amongst those who make it their speciality. Had it not been for these public sales of Wallaroo the price of copper would probably have been higher, and not lower, as there was evidence of a better state of things dawning, but this sale has completely unsettled the market the last few days, and spoiled business for the present. Chill is mostly held for much higher prices, and the quantity for sale in second hands is very limited, and as the price is low speculators may soon begin to buy forward, for there can be no very serious loss, if there is not much profit to be made at these rates. Low prices have invariably stimulated business, and there is no reason why it should not do so again. The course of the market during the week has been downward. On Monday g.o.b. was at 711. on the spot; Wallaroo, 78. 89s.: Burra, 77. 19s. The charters were announced for the first half of February as 2000 tons. On Tuesday the price of Chill remained unaltered, the attention of the trade being directed to the Wallaroo sale. The price realised for cake was from 77. 2s. 64. to 77. 12s. 64. and 77. 19s. to 77. 12s. 64. for ingots. On Wednesday the market was easy for all kinds; Chill reduced to 70. 10s. net, and 71l. forward; Wallaroo, 77l. 10s.; Burra, 77. On Thursday there was no change in quotations, but there did not specar to

een quoted 11. to 111. 58. IRON.—The state of this market is still unsatisfactory, and prices end downwards. The alight improvement which took place in bars and nail rods is gradually dying out, and there are no new orders of any magnitude to be obtained; the market is in a lan-guishing conditition, and before a decided or permanent increase in the demand can be looked for prices must be lowered, and brought the demand can be looked for prices must be lowered, and brought down to such a figure as will compete successfully with foreign countries. The loss of orders at any time is very annoying, but it is particularly aggravating when there is such a severe depression, and it is most extraordinary that men should per sist in holding out for wages that the trade cannot afford to pay, and only gaining partial employment, whereas by taking less they would certainly obtain more work. The necessity for cheaper productions is absolute, and, however reluctan men may be to work cheaper, yet they will have to do so. If the miners and collers would yield a little more for their labour it would soon make a sensible difference in the prices and demand for manufactures, and low prices for manufactures would consequently create a greater demand for the raw material. The wages must be made up out of the extra quantity, and not by diminishing the hours off abour.

hours off abour.

Our market is in that peculiar state just now that nothing short of unusually low rates will prevail; it is not only necessary that something should be done to atimulate consumption, but that means must be found and adopted to prevent Belgium participating and carrying off our orders. The English ironmasters are the largest capitalists of the two, and, therefore, ought to be able to sell cheaper Beigning participating and carrying off our orders. The English ironmasters are the largest capitalists of the two, and, therefore, ought to be able to asel cheaper and better than the Beigians. The price of pig-iron ought to be at least 10s. per ton lower than it is, and then there would be a fair chance of some activity in trade. The makers of Sootch and North of England pigs, seeing that stocks are increasing, and that sales are not adequate to the supply, had very much better give way a little at once than to wait in the vain hope of doing better. If sellers of from were able to reduce their prices the advantage to the country would be immense. Cheap coal and cheap iron would set our manufacturing districts all

alive again, and weehould soon be on the high road to prosperity, but if the price of iron is not lowered quickly a great part of the shipping business will be irretrievably lost. Scotch pigs are quoted 55s. 7%d., and a fair business effected.

| Sulpments. Sulpments. Week ending Feb. 17, 1877 Tons Week ending Feb. 19, 1876 | 5,839 4,637 |
|---|-----------------------------|
| Increase Total decrease for 1877 Imports of Middlesborough pig-iron into Grangemouth:— | 1202 4,879 |
| Week ending Feb. 17, 1877 Tons Week ending Feb. 19, 1876 | |
| Decrease Total increase for 1877. LEAD The price still continues to decline and ordina | 155 10,227 ry English |

LEAD.—The price still continues to soft pig has been quoted down to 21l. ELTER.—Silesian has not altered. Hard in moderate request,

TIN PLATES.—A slightly better enquiry, but no advance in rates TIN.—The market has been drooping nearly all the week. On Monday Straits was 72l. 10s., and Australian 71l. On Tuesday Straits dropped to 72l., but Australian was unchanged. On Wednesday prices were quoted the same as the day before; but on the following day (Thursday) 71l. 10s. was accepted for Straits, and 70l. 10s. for Australian. To-day the market is looking up, and the price is about 10s. per ten higher. 10s. per ton higher.

THE IRON TRADE—(Griffiths's Weekly Report).—Friday Evening.—The closing price of g.m.b. warrants on the Glasgow Exchange this afternoon is 55s. 6d. buyers, about is. per ton less than the price this day week. We quote makers' No. 1 Iron Gartsherrie, 62s. 6d.: Colness, 66s.; Calder, 63s. 8d.; Langlean, 63s. 6d.; Summerlee, 61s. 6d: Monkland, 37s., f.o.b., Glasgow; Glengarnock, 69s. 6d.; Eglinton, 57s., f.o.b., Adrossan; Shotts, 63s., f.ob., Leith; Kenniel, 57s. 6d., f.o.b., Bo'ness. The progress of the iron trade, since the opening of 1877. has been much less satisfactory than was generally expected at the close of last year. We have witnessed much quieter markets and less activity on this Exchange than was manifest in November and December, and weedoes the markets, to-day, in the same dormant condition. There was a very large business done in the raw material on the Middlesbro and Birmingham Exchanges in November, when the ironmasters anticipated better trade. This circumstance no doubt explains the absence of large buying in all centres of the raw material by manufacturers.

The Glasgow market has exhibited weakness this week, with a loss of nearly 3s, per ton on Monday's prices, which then were 58s. 3d. It is a hopeful feature in the pig-iron trade to witness the steady consumption of the enormous out put; and although the markets are weak, the fact of the supply being regularly taken by consumers is very encouraging; at the same time, as we have stated before, the great output in Middlesbrough and Glasgow seems to us to militate effectively against any advance in prices at either of these centres under present conditions of supply and demand. Increased shipping orders will alter the present unfavour able prospect; however, in the absence of these we cannot expect improvement, but may fairly anticipate the opposite. We believe that there will be an improvement in the trade in April and May, the Americans having settled their election for President; and possibly the debates in the House of Commons may have ren

Messrs. SANDFORD and BIRD-The metal markets generally are extremely Messrs. Saydford and Bird—The metal markets generally are extremely quiet and inactive; manufactured iron shows no change, and pig-iron is somewhat easier.—Copper.—The 1015 tons Wallaroo sold yesterday at from 771. 2s. 64. to 771. 12s. 64. per ton for cake and ingot, being a reduction since last month of about 61. per ton. The markets close quiet at 704. 10s. to 711. for g.o.b. Chili bars, and 771. 10s. for Wallaroo. English easier as per quotations.—Tix has a downward tendency, and the demand is limited. A fair quantity of Australian has changed hands at 71. Straits is neglected. English ingots dull at 764.—TIX-PIX-ATES still rule in buyers favour, and show no sign of improvement.—Lead is dull, but prices remain unchanged.—Quicksilver has been raised to 84., reduced to 71. 10s., and closes at 71. 15s. per bottle.

The MINING SHARE MARKET continues dull, and without any material alteration in nominal prices.

We hear of no particular change in the Metal Market, but at the Cornish Ticketing, on Thursday, the standard for copper ores declined 11.6s. per ton.

The shares chiefly dealt in have been Great Laxey, Glenroy, North Laxey, Van, East Van, Leadhills, Parys Mountain, Van Consols, West Chiverton, Wheal Grenville, Tankerville, and a few others. The shares in Tin Mines continue flat. There is scarcely any

Chiverton, Wheal Grenville, Tankerville, and a few others.

The shares in Tin Mines continue flat. There is scarcely any dealing in the heavy stocks, and not much in others. Dolcoaths are 35 to 37; the mine is said to be looking well at the bottom level. Carn Brea, 35 to 37; Cook's Kitchen, 3 to 3½; South Condurrow, 5½ to 6½; Tincroft, 19 to 20; West Godolphin, 2½ to 3½; Wheal Agar, 3½ to 3½; Wheal Kitty (St. Agnes), 2½ to 3½; Wheal Uny, 1½ to 1½; Wheal Basset, 7 to 9; West Basset, 3½ to 4; South Frances, 15s, to 20s,; West Frances, 4½ to 5. Botallack meeting was held on Wednesday, and the accounts showed a profit of 202L on the three months' working, and a debit balance of 2345d. The tin sold was 110 tons; copper ore, 45 tons; credits, 5199L. The costs are charged to the end of December. Wheal Grenville, ½ to 1 (call paid); at the meeting a call of 10s, per share was made. The tin sold—7 tons 8 cwts.—realised 44L 10s, per ton = 330L 2s. 9d. South Crofty, 16 to 18; a call is expected here next week. New Consols, 1 to 1½. In Copper Mines shares there has been little doing. West Tolgus, 59 to 61; at the meeting, in Cornwall, the accounts showed a profit of 718L on two months working, and a dividend of 1L per share (512L) was declared, and the rest added to the balance in hand, making 531L. The copper ores sold (642 tons) realised 3346L. The costs were charged to Jan. 5, and the ores sold for the next account, and not credited in this account, realised 3049L 9s. 3d., which will leave about 200L profit for the two months. The engine-shart is down within 44 fms. of the 145. Prince of Walas shares.

which will leave about 2002, profit for the two months. The engine-shaft is down within 4½ fms. of the 145. Prince of Wales shares have advanced to 4s., 6s.; the mine has materially improved in the 45 end west, which is now 3 ft. wide. worth 102, per fathom, and going into whole ground from surface. This is the same level that yielded great riches further east. The agent considers the discovery as very important, and it is opening out ground that will work at a good profit. The 55 west is also yielding low quality ore and in good profit. The 55 west is also yielding low quality ore, and in about a fortnight the 55 and 77 will be communicated, and open

about a fortnight the 55 and 77 will be communicated, and open out ore ground.

Wheal Crebor, 2\frac{3}{2} to 3\frac{1}{2}; the lode in the 120 east is 6 ft. wide, and is still worth 25\frac{1}{2}, per fathom. The lode in the 108 east is 5 ft. wide, worth 20\frac{1}{2}, per fathom. In the winze sinking below the 48 the lode is worth 15\frac{1}{2}, per fathom. Devon Great Consols, 4 to 4\frac{1}{2}; Cocking's winze has been communicated with the 160; lode worth 30\frac{1}{2}, per fm. The 130, east of Tregay's, is worth 12 tons of copper ore, or 50\frac{1}{2}, per fathom. The sale of ore on Thursday—820 tons—realised 3189\frac{1}{2}. Cathedral, 20s. to 30s. East Caradon, 1 to 1\frac{1}{2}; the sale of ore nerelised 53\frac{1}{2}. Hingston Down, 10s. to 15s.; the sale of ore here brought 54\frac{1}{2}. 6c. dardon, 1 to 1\frac{1}{2}; the sale here realised 136\frac{1}{2}. Parys Mountain, 10s. to 12s. 6d.; no change here. Penstruthal, 11s. to 13s. South Caradon, 115 to 125; the sale of ore here realised on Thursday 265\frac{1}{2}. West Seton, 32\frac{1}{2} to 35; Be 16\trac{1}{2} to 11\frac{1}{2} to 12s. 6d. to 17s. 6d. Holmbush sold at the ticketing 75 tons of copper ore—55 tons at 3s. per ton and 20 tons at 2\frac{1}{2}. 9s.: total, 57\frac{1}{2}. In Lead Mine shares the chief demand has been for Van, Great Laxey, Glenroy, North Laxey, and a few others. Roman Gravels are 13\frac{1}{2} to 14; the 106, north of shaft, is yielding good stones of lead ore; the 106 south is worth 3 tons of lead per fathom. Tanker-8\frac{1}{2} to 14; the 106, north of shaft, is yielding well for further improvement. The three stopes in back of 180 end, west of shaft cross-cut are worth together 7\frac{1}{2} tons of lead ore per fathom. West

per fathom; 180 west, 66L per fathom, and looking well for further improvement. The three stopes in back of 180 end, west of shaft cross-cut, are worth together 7½ tons of lead ore per fathom. West Tankerville, 1½ to 1½; the 63 south is improving. Great Laxey, 21 to 21½. Glenroy have been in good request, at 1½ to 2; the 40 stopes are turning out good blende, and the 50 rise in a rich lode mixed with blende throughout. The adit end north is in a very promising lode, yielding good stones of ore. There are several good roints to come off and the agent is very sanguing as to the results.

promising lode, yielding good stones of ore. There are several good points to come off, and the agent is very sanguine as to the results. North Laxey, 16s, to 18s; no particular change here, except that the winze from the 121 is through the hard bar of ground, and lode very much improved. Van, 35 to 38. East Van, 7 to 7½.

Derwent, 3 to 3½; these mines are improving, and the points in operation are yielding in the aggregate 13 tons of lead ore per fm., and the reserves of ore ground are being added to monthly. Leadhills, 6 to 6½; Combmartin, 12s, 6d, to 15s.; Aberdaunant, ½ to ½; Assheton, 1½ to 1½; Bodidris, 1½ to 1½; Glyn, 2½ to 2½; Great West Van, ¾ to ½; Ladywell, 1 to 1½; Pennant, 5½ to 6; Pennerley, ¾ to ½; Ladywell, 1 to 1½; Pennant, 5½ to 6; Pennerley, ¾ to ½; Ladywell, 1 to 1½; Pennant, 5½ to 6; Pennerley, ¾ to ½; Nost of the companies have completed their dead work, and have every thing in readiness for profitable washing.

The shares in Lead Mines are unchanged. It is stated that there are in California alone over 500,000 acres of gravel deposit that can only be worked alone over 500,000 acres of gravel deposit that can only be worked alone over 500,000 acres of gravel deposit that can only be worked alone over 500,000 acres of gravel deposit that can only be worked aby price of gravel deposit that can only be worked aby price of gravel deposit that can only be worked aby price of gravel deposit that can only be worked aby price of gravel deposit that can only be worked aby price of gravel deposit that can only be worked by hydraulic mining, and of this not more than 1-20th has been mined; this has produced over 3900,000,000. The miners throughout the State are at work on every piece of auriferous gravel to the State are at work on every piece of auriferous gravel to work. The prospects for good returns are encouraging. Wost of the companies have completed their dead work, and have every thing in readiness for profitable washing.

The shares in Lead Mines are without much gravel to alone or some dead

Wye Valley, 5½ to 6½; West Wye Valley, 3½ to 4; Clementina, 30 to 40 per 128th; D'Eresby Mountain, 20 to 25 per 512th.

Among Forbign Mines Argentine are quoted 5½ to 5½; Blue Tent, 3 to 3½; Condes, 4½ to 5½; Birdseye, ½ to ½; Cedar Creek, ½ to 5½; Chontales, 7s. to 9s.; Don Pedro del Rey, ½ to ½; Eberhardt and Aurora, 8½ to 9; Emma, ¾ to ½; Echequier, 1½ to 1½; Flagstaff, 3½ to 3½; Frontina and Bolivia, 1½ to 1½; I X L., ¾ to 1; New Zellard Kapanga, 2½ to 3½; Last Chance, ¾ to ½; New Quebrada, 3½ to 3½; Pestarena, 3s. 6d. to 4s. 6d.; Port Phillip, 8s. to 10s.; Richmond, 6½ to 6½; St. John del Rey, 270 to 290; South Aurora, 5s. to 8s.; Swestland Creek, 5s. to 7s. land Creek, 5s. to 7s.

The market for Mine Shares on the Stock Exchange during the The market for Mine Shares on the Socia Pagnange during the week has continued without animation, and quotations generally almost nominal. Few transactions have been recorded, business being upon a most limited scale. The feature of the week has been sharp decline, and equally rapid recovery, in St. John del Rey the

ock.
It is believed that the additional funds required for developing the state of It is believed that the additional funds required for developing the property of the Aruba Island Gold Mining Company will now be obtained. It is very generally known that financially the concern is in a very unsatisfactory condition, having a debenture of one are 10,000L, and other debts amounting to about 2500L, with no means of satisfying them. The directors being powerless to provide a remedy, one of the largest debenture-holders has taken action, and it is understood that on his behalf Mr. P. M. Taylor, of Threadneedle-street, has brought about an arrangement by which it is proposed to form a new company to lease the concession (from the old company), with a nominal capital of 50,000L, the debenture-holders undertaking to accept shares in the new company in payment of their debt. The new company is to get its capital back with interest, and then the old and new companies are to share profits with a capital of 100,000L. The management of the concern is to be placed in the hands of Messrs. John Taylor and Sons, of Queen street-places that there is the best possible guarantee that the enterprise will in the hands of Messrs. John Taylor and Sons, of Queen street-places of that there is the best possible guarantee that the enterprise will be honestly and energetically carried on. As the original comparise will be honestly and energetically carried on. As the original comparise the distribution of the sound started with a capital of 500,000L, and as the property is undoubtedly a good one, there is considered to be every chance of a company with one-fifth the capital—or 100,000L—making the undertaking a success.

New Zealand Kapanga, 3 to 3½; a telegram to hand during the most of the sump winze below the sum of the sump winze below the sum of the sum o

taking a success.

New Zealand Kapanga, 3 to 3½; a telegram to hand during the week announces that the sinking of the sump winze below the No. 5 level, and the driving of the level towards the C romandel shute of gold, is steadily progressing. The opening of the mine is therefore, going on very satisfactorily, and the prospects continuation of the steadily progressing. The telegram from Rio, on Tuesday, states the produce for January to have been 33,500 cits, of the value of 12,980%, the ley of the ore being 6·1 cits per ton. The produce continues small, owing to the large temporary admixture of killas. The heavy rains have caused 1 landslips with considerable damage, and the duty of the stamps is short from breakage of water-course. These casualties are excessively annoying, but are not regarded as likely to have any permanently bad effect upon the returns and profits. The sudden drop in the price of the shareast the beginning of the week, entirely through market operations, having called forth a justifiable criticism from the Times a complete answer has been given by Mr. John Hockin, the managing director, who explains that the company has now exited 46 year, and during that period has returned to its fortunate shareholden the capital six times over. It has in former times met with accidents, such as all mining concerns are liable to, and in 1867 a disastron, and the first openered which destroyed the mine, and it had to be the capital six times over. It has in former times met with accidents, such as all mining concerns are liable to, and in 1867 a disastrous fire occurred which destroyed the mine, and it had to be opened out from the surface. This was accomplished after seen years' patient labour During the whole of that period the shareholders had the fullest confidence in the management, and supported the directors throughout, and the result was the successful recovery of the mine at the end of 1873. Since that date the shareholders have received in dividends a sum equal to the entire capital of the company—253,000%, and a reserved fund has been formed, which now amounts to about 40,000%. One rule with the directors is to communicate all information received from the mines fully and unreservedly to the shareholders, and they never withhold for a measurement.

communicate all information received from the mines fully and unreservedly to the shareholders, and they never withhold for a moment information, whether favourable or adverse.

Argentine, 5\(\frac{1}{2}\) to 5\(\frac{3}{4}\); a detailed report has been received, and a subsequent telegram reports sinking in the bottom of the mine ina lode the average yield of which is 2 ozs. 16 dwts., and the width of which is upwards of 26 ft., and is now being prosecuted. All other parts of the mine are looking well. The calciner has arrived. Mr. Oxland, the son of the inventor, is now due to arrive at the mines, and his report is expected at an early date. Conden 43 to 51 th. Oxiand, the soll of the inventor, is now due to arrive at the mines, and his report is expected at an early date. Condes, 4½ to 5½; the official advices announce a discovery in the bottom worth 100% per fathom, which is confirmed by a private telegram. A further shipment of ore is expected by the Pacific Mail, due next week. New Quebrada, 3½ to 4; the ship Semper Fidelia, with the second cargo of ore from this company's mines, has arrived, and been discharged at Swansea. at Swansea

Richmond, 64 to 63; the usual weekly telegram gives the week's run at \$55,000. The refinery has this week produced doré bars to the value of \$32,000. The manager's report states that operations the value of \$32,000. The manager's report states that operations in the mine were resumed on Monday morning. The 800 ft. drift has been driven a further 50 ft. No. 1 winze is down 40 ft.—ths bottom in limestone, at which point a drift was commenced to intersect the ore which crossed the winze above. No. 2 winze is also down 40 ft., the ore met with in it being of low grade. The stopes are about the same as last reported. At the 600 ft. level the drift started from the footwall cut a vein of good ore, which looks promising. The 400 level is looking well, widening as the work goes upwards, and looking promising. The furnaces are in full blast, and working satisfactorily. The accounts of the proceedings in the late injunction suit are as yet incomplete, the local papers to hand only reporting the opening of the case.

and working satisfactorily. The accounts of the proceedings in the late injunction suit are as yet incomplete, the local papers to hand only reporting the opening of the case.

Exchequer, 1§ to 1§; the manager writes that the lode is larger as they go deeper, and its quality, he believes, will progressively improve. The hoisting-works just completed are capable of going down 1000 or 1200 ft. The personal supervision of the managerhas been hitherto needed in the completion of many important works at the mine, as well as the stamps-mill, the saw-mill (with its concomitant log-cutting and hauling teams and teamsters), and there are 80 men employed. This multiplication of work will not occur again. It appears Mr. O'Hara is confident he will extract 85 per cent, of what is in the ore, but the manager thinks 90 per cent, and states that the only limit to the quantity of ore obtainable from the mine when the shaft shall have been sunk to 1000 ft, will be that fixed by the number of men employed. The new forman, some time underground agent in the Virginia Consolidated Mine says he wishes no money if he does not supply the 18 stamps to their full capacity every day in the year, provided he has men enough. I.X.L., § to §; the indications in the cross-cut at the 200 ft, level justify the manager in expecting they are getting into a paying body of ore at no distant day. The lode has well-defined walls, and is 7 ft, wide. The Buckeye adit, which takes the shaft water \$35. ft from the heiging floor is III. On the high the standard to the standard that water \$35. ft from the heiging floor is III. ing body of ore at no distant day. The lode has well-defined walls, and is 7 ft. wide. The Buckeye adit, which takes the shaft water 35 ft. from the hoisting-floor, is 111 ft. north from shaft, and turned out five carloads of good ore. Eberhardt and Aurora, 8½ to 8½, there has been received a further shipment of bar silver, valued (at present price) at about 5000l. Chicago, 4½ to 5; the net profit for Ismary was \$5000.

January was \$5000.

The market for Hydraulic or Gold Mining shares has been quiet, and prices are unchanged. It is stated that there are in California alone over 500,000 acres of gravel deposit that can only be worked by hydraulic mining, and of this not more than 1-20th has been mined; this has produced over \$900,000.000. The miners throughout the State are at work on every nice of surfacence gravel to

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pearage of the lode, which is reported to be worth 80% per fathom pearage of the lode, which is reported to be worth 80% per fathom is lead, and the important fact that the 40 east of main shaft is for lead, and the important fact that the 40 east of main shaft is lead for easting into good ore ground, has attracted increase attention also entering into good ore ground, has attracted increase attention also entering into good or ground, has attracted increase attention also main and the form of 20 per cent. Per annum) were sent out on Wednesday. The mist of 20 per cent. Per annum) were sent out on Wednesday. The mist of 20 per cent per annum) were sent out on Wednesday. The mist of 20 per cent per annum) were sent out on Wednesday. The mist of allowing that No. 1 lode has improved since the general meeting, aports that No. 1 lode has improved since the pushed down as soon so the rain moderates. West Wye Valley, 3½ to 4; the lode at the as the simporing, and Brooke's shaft is still going down in favourable with improving, and Brooke's shaft is still going down in favourable working can now go on without hindrance. Good progress is the working can now go on without hindrance. Good progress is the working ean now go on without hindrance. Good progress is exceptionally good. St. Harmon, 3½ to 3½; the mine continues to exceptionally good. St. Harmon, 3½ to 3½; the mine continues to exceptionally good. St. Harmon, 3½ to 3½; the mine continues to exceptionally good. St. Harmon, 3½ to 3½; the mine continues to exceptionally good. St. Harmon, 3½ to 3½; the mine continues to exceptionally good. St. Harmon, 3½ to 3½; the mine continues to exceptionally good. St. Harmon, 3½ to 3½; the mine continues to exceptionally good. St. Harmon, 3½ to 3½; the mine continues to exceptionally good. St. Harmon, 3½ to 3½; the mine continues to exceptionally good. St. Harmon, 3½ to 3½; the south Comparison of the stall good of the sent and the stall good. The property of the p

salidated, 6½ to 6½; St. John del Rey, 293 to 295; San Fedro, 24 to 1½; Serra Battes, 1½ to 1½; South Aurora, ¾ to ½; Decoma, ¾ to ½; United Mexican, ¾ to 2½; Oregon (pref.), 4 to 4½.

Collieries.—During the past week but few transactions have taken place in colliery shares, this market, like all those for stocks and shares, whatever the description, having been influenced by the slagnation in general trade. Quotations, however, remain about the same, the exception, which proves the rule, being the price of Capel House shares, which have received a stimulus from the cutting of the celebrated Park scam last week, and have risen to 3½, 3½; this seam was cut in the new 16 ft. pit, at a depth of 388 yards from surface. It is 5 ft. 10 in, thick, all seld ceal, which is said to be of magnificent quality, and the roof and floor of the sam being good, it is believed the coal can be worked economically and cheaply. It will take a chort time to get the opening out of the seam under weigh, but some are solon to the present output of the colliery will soon be made from this source. The sinking of the 15 ft. pit, now down 179 yards, will be preceeded with at once, and should be down to the Park seam by the beginning of October, after which the output can be at once increased to 1000 tons per day. Thorp's Gawber shares close at 1½ to 2½; the directors' report and accounts have been issued, and from them it would appear that during the six months ending Sert. 31 there have been nised and sold over 101,932 tons of coal, realising a profit of 2503. 1s. 2d., as against a loss of 2.8 s. 1d. for the previous half-year, and this in the face of a reduced price obtained during only three months out of the six embraced by the accounts. The shredders may, therefore, be congratulated on a greatly improved prospect as regards the future. It should be pointed out, however, that no allowance has been made for depreciation, &c., of plant. New Sharlstons have been little dealt in, but remain shout the same as last week—4 to 4½; the report sh

Lane, 4½ to 4½; West Cannock, 5 to 7 a)s.

At the Truro Ticketing, on Thursday, 2694 tons of copper ore were sold, realising 10,6091. 6s. 0d. The particulars of the sale were—Average standard, 1060. 2s.; average produce, 6‡; average price per ton, 3/. 19s. 0d.; quantity of fine copper, 169 tons 17 cwts. The following are the particulars:—

Date. Tons. Standard, Produce. Per ton. Per unit. Ore copper. Jan. 18. 3698 & 2104 10 0 ... 642 ... £4 1 6 ... 12s. 5½d.... £82 7 0 Feb. 1. 1224 ... 99 19 0 ... 7½ ... 5 2 6 ... 13 0 ... 65 0 6 ... 22. 2094 ... 106 2 0 ... 6½ ... 3 19 0 ... 12 6 ... 65 10 6 Compared with the last sale, the decline has been in the standard 11. 6s., and in the price per ton of ore about 1s. 8d.

DERWENT.—It is most satisfactory to find this valuable and important property turning out equal to the high anticipations entertained of it. The four levels being driven at Westgarth's and I-fferic's shafts are opening stoping lead ore ground to the extent of 90 fms. per month, and the quantity taken away is only 35 fms. per month, so that about 55 fms. of ore ground are being added monthly to the reserves. Valuable discoveries are expected soon in the various levels and cross-cuts, particularly when the Sun vein is cut in the little limestone, in which the other lodes in the mine have been very rich, but the Sun vein has never yet been seen in that sill, though it has been very productive in the other sills.

THE DISCOVERY OF SILVER AT WHEAL NEWTON.—We are informed by the general manager that he has just brought up with him a magnificent rock of ore weighing nearly 1 cwt., and assaying over 1000 ozs. of silver to the ton, which he will be happy to show to any person on application at the offices of the company, Palmerston Buildings, Bishopsgate, where also may be seen a fine collection of samples from Holmbush.

of samples from Holmbush.

NORTH BUSY UNITED.—This mine continues to open up remarkably rich, and is one of the best young tin and copper mines in Cornwall. The 35 end is being driven in a lode worth 40% per fathom; cost of driving 4% 10s. per fathom, and lode standing whole to surface; the 12 end driving west is improved, and opening up a long professible ground. run of profitable ground.

GORSEDD AND MERLLYN,—The lode is improving. At No. 2 doubt that a great success is achieved.

LLANIDLOES (Lead).—The proprietors have responded well to the Appeal for additional capital, and a large portion of the debentures have already been applied for. This is, no doubt, to a certain extent owing to the fact that the directors and manager have further evinced their faith in the concern by subscribing liberally, and there appears to be no doubt that if all combine to give the mine a ligorous working it will handsomely repay their outlay. All persons who have lately seen the mine are unanimous in saying that its prospects fully justify a vigorous development, and that if a liberal working capital be provided, and judiciously expended, it will equal in productiveness the best mines in the district. Latest

accounts state that the lode at the 72 continues steadily to improve, and there are the best possible prospects for the deeper levels.

and there are the best possible prospects for the deeper levels.

SANTA BARBARA (Brazil).—By the last advices from Peri, dated Jan. 14, we have news from the mine up to the end of December, which shows that the estimated profit for the year was 7766%. This result was obtained from 49 heads of stamps. A new 15 heads of stamps was to be at work by the end of January, making a total of 64 heads, which will enable them to stamp more than a quarter more stone than they have been doing in 1876, so that the returns and profit for 1877 will be much larger, and the dividends increased.

and profit for 1877 will be much larger, and the dividends increased.

The Almada and Tirito Consolidated Silver Mining Company.—We refer our readers to the interesting reports from the mines, published in to-day's Journal, which come up to Jan. 11. The Tirito appears to be improving steadily at the 42 and the 47 below adit, at which latter point the lode crosses the Tirito engine-shaft. The produce from the lower levels of the Tirito is an argentiferous copper ore, which can be treated on the spot by the patio process. Since Jan. 11 Mr. Breach sent a telegram of the date, probably, of Jan. 20, and arrived in London on Feb. 5, as follows:—"Treating black ores successfully. Working Mina Grande" This is of great importance as showing that Mr. Breach had discovered a method of profitably calcining and reducing the black ores on the spot with quicksilver by the pan process. Mr. Breach's letters had previously reported experiments in that direction, which gave promise of a successful result. As before this, in December Mr. Breach had made a profit of 600% in the month, the prospects of the future must be looked upon as most encouraging.

The Flagstaff.—At a meeting of the shareholders yesterday,

The FLAGSTAFF.—At a meeting of the shareholders yesterday, which is fully reported in another column, some alterations were made in the Articles of Association. The mine is now making returns, and Prof. Vincent, who visited the property in April last, speaks in high terms of the quality and quantity of the ore. Great credit is due to the energy which the present board have displayed in preserving the property for the shareholders.

ARUBA GOLD MINING COMPANY.—At a meeting of the share-holders, held on Thursday, which is fully reported in another column, it was decided to re-organise the company. There exists without doubt considerable mineral wealth in the property, and there appears to be no reason why, under the projected energetic management, good returns should not be secured for the shareholders. The mining management is about to be placed in the hands of Messrs. John Taylor and Sons, of Queen-street-place.

The directors of the Sun Auto-Pneumatic Lighting and Heating Company have declared a dividend of 1½ per cent. for the past year.

The Anglo-Californian Bank has declared an interim dividend of 10s, per share for the half-year ended Dec. 31, being at the rate of 10 per cent. per annum.

The report of the United Limmer and Vorwohle Rock Asphalte Company for the year 1876 shows a profit of 5225%. From this 1200% is placed to the reserve fund, and the proposed dividend of 4s. per share absorbs 3969%, leaving 56% to be carried forward.

NOTICE OF REMOVAL.

MESSRS, F. W. MANSELL AND CO. (SWORN STOCK AND SHARE BROKERS), have REMOVED to 43 AND 43A, PALMERSTON BUILDINGS, OLD BROAD STREET,

DESIRABLE INVESTMENT FOR CAPITAL.

WANTED, a FEW GENTLEMEN, to JOIN in the PURCHASE and WORKING of a PIEOE of MINING GROUND in the RICHEST KNOWN DISTRICT in ENGLAND. £80,000 worth of mineral has been sold from surface, as deep as 40 fathoms. A steam engine of sufficient power is on the property, and pitwork all fixed ready to work. £1800 will be sufficient to purchase the sett, with its machinery, and sink the mine 20 fms. deeper, and open up a rich copper mine. It is proposed to divide it into 50 shares, at £30 each. Early application is necessary to secure it.

Apply for shares to Mr. Chas. Bawden, Poldice House, St. Day, Scorrier, Cornwall.

WANTED, a WELSH SILVER-LEAD MINE.—Must be partly developed, and in such condition that ore can be immediately extracted. With machinery preferred.

Bend full particulars, with lowest price, to "F. P. P.," Deacon's, Leadenhall-street, London, E.C.

WANTED TO PURCHASE IMMEDIATELY, ZINC ORE, BLENDE, and CALAMITE MINES.

Send full particulars addressed to "Purchaser," MINING JOURNAL Office, 26, Fleet-street, London, E.C,

WANTED, a SECOND-HAND GOOD 40 or 45 in. cylinder PUMPING ENGINE, with one or two BOILERS. State price, and where they are to be seen.
Address, "R. M.," care of Mr. Thos. B. Provis, Camborne.

TO MINING COMPANIES.

A YOUNG MAN, at present holding the position of CLERK and DIALLER, will be shortly disengaged, and WANTS a SITUATION OF TRUST in a LARGE MINE or MINING OFFICE. Has been bred to Mining, and understands the practical part of the working of mines also. Highest re-

Address, "R. T.," MINING JOURNAL Office, 26, Fleet street, London, E.C.

A GENTLEMAN wishes to MEET with ONE or TWO OTHERS to JOIN HIM in WORKING a RIOH COPPER MINE in the CARNAR YON DISTRICT. Everything, including necessary machinery, is ready to start working for the market. Capital required, from £2000 to £3000.

Address, "Peacock Ore," Post Office, Bangor.

A PRACTICAL MINE AGENT is DESIROUS of an ENGAGE
MENT, at HOME or ABROAD. Over 10 years at (Mr. Mason's) SAO
DOMINGOS MINES, PORTUGAL. Fully conversant with the Spanish and
Portuguese languages, and management of men.
Apply to Mr. H. Collison, 5, Bond-court, Walbrook, E.C.

COPPER.

THE ADVERTISER, about to erect Metallurgical Works in this country, requires the services of an EXPERIENCED PRACTICAL MANAGER as PARTNER, or otherwise. Partner preferred. State experience, salary (or interest), &c., to "W.," MINING JOURNAL Office, 26, Fleet street, London.

BEAM ENGINE, 15 in. cylinder, 3 ft. stroke, two malleable iron shafts, 9 ft. by 6 in , two fly wheels, FOR SALE.

Particulars on application to Mr. GEO. V. TURNBULL, Leith, N.B.

FOR SALE,—16 horse power DOUBLE CYLINDER SEMI-PORTABLE ENGINE, by ROBEY and Co., nearly new, in splendid condition.

Apply, Warson and Hill, Engineers, Nottingham.

50 Hingston, 15s. 40 Rookhope, 18s. 6d. 10 Glyn, £2 3s. 10 W.Craven Moor,£121/4

Bhares Bought and Soid at net prices. Telegree FOR SPECIAL S.4.15:—

10 Pateley Bridge, £2 1 6

10 Wye Valley, £5 7s. 6d

20 Condes of Chili, £45/s.

15 Chicago, £4/s.

2 Minera, £18/s.

MR. W. TREGELLAS, 122. BISHOPSGATE STREET
WITHIN, E.O.,
Deals in all descriptions of Stocks and Shares at close market prices.

MESSRS. THORNYCROFT AND CO.
FINANCIAL AGENTS AND SHARE BROKERS,
81, SOUTH JOHN STREET, LIVERPOOL.

ZINC ORES.

ARMAND FALLIZE,
INGENIEUR-CIVIL, A LIEGE (BELGIUM
BUYER
1.—CARBONATED AND OXYDED ZINC ORES (CALAMINE, &c.

2.-ZINC AND LEAD ORES MIXED TOGETHER, BUT DRESS ABLE KINDS ONLY

CAPPER PASS AND SON, BRISTOL,

PYRCHASERS OF
LEAD ASHES, LEAD SLAGS, SULPHATE OF LEAD, HARD LEAD, BRASS SLAGS AND ASHES, COPPER REGULUS, MATTE, SCORIA, TIN ASHES, TERNE ASHES, &c., and MIXED ORES or REFUSE, containing LEAD, COPPER, TIN, or ANTIMONY.

GEO. G. BLACKWELL,

5, CHAPEL STREET, LIVERPOOL, PURCHASER OF
MANGANESE, ARSENIC, FLUOR-SPAR, WOLFRAM, BLENDE, CALA-

MINE, CARBONATE and SULPHATE OF BARYTES, ANTIMONY ORB, CHROME ORE, MAGNESITE, EMERY STONE, PUMICE STONE, OCHRES AND UMBERS, CHINA CLAY, LEAD ORB FOR POTTERS,

T. R. GLOVER,

MINERAL DEALER AND BROKER AND GENERAL FINANCIAL AGENT
2, EXCHANGE STREET EAST, LIVERPOOL.

W. F. LOWE, F.C.S., Associate of the Royal School of Mines

ASSAYER AND ANALYTICAL CHEMIST.

ASSAYS AND ANALYSES, MADE OF ORES, FIRE CLAYS, LIMESTONES, &c.

ADDRESS, - ASSAY OFFICE, CHESTER.

HENRY AND JOHN SEWELL,
MINING ENGINEERS, AND CONTRACTORS FOR MINING AND RAILWAY MACHINERY. VALPARAISO, CHILE, SOUTH AMERICA.

WILLIAM CRAWFORD, COAL FACTOR AND GENERAL AGENT, CONSTANTINOPLE.

IS OPEN TO ACCEPT THE AGENCY OF A GOOD FIRM.

WALTER BUTLER AND CO., GENERAL MERCHANTS AND AGENTS LEITH OFFICES, MOORFIELDS, LIVERPOOL,

PURCHASERS OF SULPHUR ORES, MANGA ESE, AND ALL DESCRIPTIONS OF MINE AL PRODUCE.

MESSES. MAHLER BROTHERS AND CO., of No. 7 MINCING LANE, E.C., beg to state that, by authority of His Excellency the Minister of Agriculture, they have been APPOINTED SOLE AGENTS in ENGLAND for the SALE of QUICKSILVER produced in the MINES of the AUSTRIAN GOVERNMENENT at IDRIA.

Orders taken for delivery in Docks here, or free on board at Trieste.

MEXICO, NEW MEXICO, ARIZONA, UTAH, NEVADA, AND CALIFORNIA.

F. M. F. CAZIN,

MINING AND CIVIL ENGINEER,

At SANTA FE, NEW MEXICO, U.S. OF AMERICA,

At SANTA FE, NEW MEXICO, U.S. OF AMERICA,

Has 24 years' experience in Mining and Smelting, and 10 years' experience in American Business and Law, offers his services at moderate charges for Reporting on Mining and other Property in any of the above-named States or Territories; gives correct, aste, and responsible advice as to securing full titles and possession; and, as to best mode of utilising the property, will assist in settling existing difficulties by compromise, and in disposing of developed mining property when held at real value; offers his assistance for securing undeveloped mining properties:

home prices. As to care taken in reporting, reference is made to the Mining Journal Supplement, April 1, 1876, containing report on property of the Maxwell Land Grant and Railway Company; as to technical standing, to the prominent mee of the trade—compare Mining Journal of Aug. 30 and Nov. 31, 1872, and New York Engineer and Mining Journal, Feb. 28, 1874.

Mr. E. JACKSON,

Associate of the Royal School of Mines ANALYST AND ASSAYER.

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Notices to Correspondents.

"haven inconvenience having arisen in consequence of several of the Number during the past year being out of print, we recommend that the Journal should be filed on receipt; it then forms an accumulating useful work of reference.

LAST CHANCE MINING COMPANY.—Will you allow me, through the medium of the Journal, to ask my brother shareholders to assist the directors in saving our property? They have several times appealed to us to aid them, but little help has been given. The winding-up order has been applied for; our secretary has been working months without pay; and we are turned out of our offices for non-payment of rent. A last appeal is now made—if we cannot afford to give cash, we may still assist by giving shares, which it is in the power of all to contribute. I have hitherto refused the former, but I willingly surrender half my shares because I feel sure, if the directors would follow in the footsteps of the Hagstaff Company (and by giving them something in hand as a guarantee we might urge them to do so), I shall expect instead of a sacrifice to gain more by the increased value of my remaining shares. On the other hand, if the company collaps, what are the shares worth? As a Last Chance, let me beg my fellow-shareholders to reflect upon the result of refusing and in following the example of——A BROTHER SHAREHOLDER.

LECTURES OX MINING—"J. B." (Isle of Man).—The first volume only of Prof.

what are the shares worth? Ass Last Chance, let me beg my fellow-shareholders to reflect upon the result of refusing and in following the example of—A BROTHER SHAREHOLDER.

LECTURES ON MINISO—'J. B." (Isle of Man).—The first volume only of Prof. Callon's Lectures on Mining, delivered at the Parisian School of Mines, has only yet been published. The price is 28s., and it may be obtained of Messrs. Dulau and Co., Scho-square.

COPPER QUOTATIONS—'C. A. S." (Birmingham).—The price of Chilli bar on Feb. 10 should have been quoted 711. to 711. 10s.

Received.—"J. W. M." (Sa. Francisco)—Consolidated Virginia and the California—The late Managing Director of the Newfoundhand Mining Company—"N. E. R."—"Observer" (Bolmbush): We will endeavour to ascertain some particulars—"L. A. A."—"D. C."—"M. B. G." (Outlines of Geology). Next week—"W.A."

"Inventor" (Manchester): The letter on the Palent Laws is far too long for publication in the Journal: it should be printed as a pamphiet—"E. D."—"Share holder" (Glasgow)—"Not a Shareholder"—II Day (Unity Wood): Thanks.

THE SUPPLEMENTARY SHEET.—We have received occasional complaints, and of late a good many, that the Journal is delivered by country booksellers without the Supplement Subscribers would oblige us by demanding that the paper should be handed to them complex, as every Journal is accompanied by the Supplement when it leaves our office, and the fault of omission must rest with the sountry bookseller or their London agent.

IMPORTANY NOTICE—REDUCTION OF POSTAGE ON THE "MINING JOURNAL."—In consequence of the new POSTAL CONVENTION, which came into operation on July 1, the postage of the Mining Journal to many countries will be reduced to one fourth. Henceforth the subscription will be 1. 10s. 44. per anum (39 fra.), postage included, for the following countries. The amount will, if desired, be collected at the subscriptor's residence at the end of each year. The subscription continues until countermanded:—Austria, France, Beigium, Denman & Gierra, Notera, Portugal dio includin

THE MINING JOURNAL,

Bailway and Commercial Gazette.

LONDON, FEBRUARY 24, 1877.

OUR IRON ORES.

It is somewhat singular, after so much has been written and said with respect to our stores of fuel, and the probable period when they will be exhausted, that little or no notice has been taken of the extent of our ironstone fields, how long those now being worked are likely to last, even with the present strain upon them, or where new deposits may be expected to be found. Yet, next to coal, it is the most important mineral we have, to say the least, whilst of late years the consumption of it has increased in a greater ratio even than coal itself. The varieties of ironstone are more numerous than coal, whilst the value varies a great deal more, hence the importance of a knowledge of the various descriptions and the places where they whilst the value varies of roostone are more numerous than coat, whilst the value varies a great deal more, hence the importance of a knowledge of the various descriptions and the places where they are to be found. With regard to coal, we are in possession of all the facts relating to where it is to be met with in different counties, and the quantity that will be raised down to a certain depth, but no such information can be obtained in respect to our iron ores, although there is no comparison between the value of their products and coal itself. From them we have the most pondrous machinery, as well as the most minute springs and valuable particles of steel, yet no one that we are aware of has ever suggested that we should have duly scheduled, as near as possible by properly qualified Government officials, the extent of our ironstone fields, their probable duration, and the quality of the deposits. With such information many persons would, doubtless, be inclined to seek for the most valuable ore. We know that the best deposits are those found in the North Lancashire and Cumberland districts, where the hematites are found as veins in the Lower Silurian, but are both larger and purer in the Mountain limestone: the latter being in three districts—Furness, Whitehaven, and Millon. In ages long ago, no doubt, by volcanic force mighty gorges were formed, where fissures of limestone were the result, and these fissures were afterwards filled with iron oxides, barytee, and the oxide of manganese, and it is from these that we now obtain the richest and best of our iron over. Then there is the now that the property of the property barytes, and the oxide of manganese, and it is from these that we now obtain the richest and best of our iron ores. Then there is that rather extraordinary deposit in Cornwall—the great Perran Iron lode, averaging about 30 ft. in width for a course of several miles, containing large quantities of spathose iron. The upper part of the lode consists chiefly of brown hematite, due to the decomposition of the spathose ore met with before the sea level is reached. The great bunches of ore in the lode appear to occur where it is crossed by the north and south lead lodes of the district. At Frampton Cottrell, a few miles from Bristol, some excellent brown hematite is being worked, but of which we hear very little. In Somerstshire apathose over is found in the Silvarian and Deponies averages as well as worked, out of which we hear very little. In Somersetshire spathose ore is found in the Silurian and Devonian systems, as well as in the carboniferous limestone at Ashton, near Bristol. We have noticed the chief places where the finest qualities of hematite ore are to be found as at present known, but feeling assured there are many other districts where they will be met with. It is information with regard to the latter point, as well with respect to the extent generally of the known fields of the same qualities, that we have here induced to notice the matter.

have been induced to notice the matter.

It is true that our hematites form only a very small portion of the ore raised in the kingdom, yet their consumption is rapidly inreasing, seeing that from them our Bessemer sized is principally made. We are aware that the ores mostly used in making iron are the oxides and the carbonates, which are found in a variety of situations, the latter frequently in connection with the collieries. In Northamptonshire, or at least in some parts of it, there are two beds of the hydrated oxide containing from 30 to 40 per cent. of metal. The upper, 12 feet thick, is separated by 10 or more feet of an oxheen, substance from the lower one which is from 15 to 20 feet. metal. The upper, 12 feet thick, is separated by 10 or more feet of an ochieous substance from the lower one, which is from 15 to 20 feet in thickness. Then we have the va-t deposits in Cleveland, as well as in Linconshire, of the extent of which, the latter in particular, we have no really reliable knowledge, but it is quite probable that the measures run through Lincolnshire into Northamptonshire, and in all probability are joined together in the small county of Rutland. The lies and collisions are true from the restriction of the standard country of seventies extent from the restriction. The lias and colite formations extend from the north-east coast of Yorkshire to the south coast of Dorsetshire, and there is every reason to believe that ironstone will be found running continuously throughout the entire distance. But of this our knowledge is very limited, so that were the necessary data given officially landowners would not let such fields lie fallow, but would be only too glad to utilise them.

The value of cres, as we before stated, varies most materially, so The value of ores, as we before stated, varies most materially, so that in some instances a landowner with a valuable quality of ore in it would at once take advantage of it, and so bring into the market the quality of stones for which there is the greatest demand. From the latest returns we find that the value of the hematics of Cumberland and North Lancashire is exactly 154, per ton, whilst Cleveland is only rated 4s, per ton. In Cornwall the value is put down at 14s, per ton, and in Northamptonshire at 3s, 4d, per ton. These are wide apparent discrepancies that may be correct or otherwise, but it shows that there are district, where owers must be wise, but it shows that there are districts where owners must be

making very large profits, whatever others may be doing.

As to the extent of the districts where ironstone is now being

10 years we find that there has been a vast increase in this production, and whilst some districts show a falling off in the production others show a vast increase. This will be seen from the following figures of the tonnage raised in the period named—

1806-tons.

| | | | | | | 1000 - tons | 5. | | | | 1570 -tons |
|------------------|------|-----|------|------|------|-------------|-----|-----|-----|-----|-------------|
| Cornwall | *** | *** | *** | | | 18,683 | *** | *** | | | 11,404 |
| Devonshire | | *** | *** | *** | *** | 40,671 | *** | *** | *** | *** | 90 504 |
| Somersetshire | | *** | *** | 101 | | 35,323 | 111 | *** | | | 45 105 |
| Gloucestershir | | *** | *** | *** | *** | 163,129 | *** | *** | *** | | 222 000 |
| Wiltshire | | *** | *** | | | | *** | *** | *** | *** | AR 1 1 1 10 |
| Oxfordshire | *** | *** | *** | *** | *** | 1,552 | *** | | | *** | 04 500 |
| Northamptons | | | | | | 476,981 | | *** | | | 1.085,899 |
| Lincolnshire | | | *** | *** | *** | 175,720 | *** | *** | 040 | *** | 573,366 |
| | | *** | *** | *** | *** | 285,907 | *** | | | *** | |
| Shropshire | *** | | *** | *** | *** | | *** | *** | | *** | 240,568 |
| Warwickshire | *** | *** | 0.00 | 9.09 | | 18,7 0 | *** | *** | *** | *** | 97,456 |
| Derbyshire | *** | *** | *** | *** | *** | 329,500 | *** | *** | *** | *** | 218,132 |
| Nottinghamshi | | *** | *** | *** | *** | _ | | *** | *** | *** | 11,751 |
| Staffordshire, 1 | | | | *** | | 612,243 | *** | *** | | *** | 939,024 |
| Staffordshire, | Sout | th | *** | *** | *** | 599,000 | *** | *** | *** | *** | 715,451 |
| Lancashire, &c. | | *** | | *** | *** | 685,727 | *** | *** | *** | *** | 835,984 |
| Cumberland | | *** | *** | *** | *** | 838,047 | *** | *** | *** | | 1,147,988 |
| Yorkshire, Nor | th | *** | *** | *** | *** | 2,809,061 | *** | *** | *** | 241 | 6,121,794 |
| Yorkshire, We | st | *** | *** | *** | | 357,000 | *** | *** | *** | | 353 582 |
| Northumberlan | nd. | | *** | *** | *** | 105,090 | *** | *** | *** | *** | 60,515 |
| North Wales | | | *** | *** | *** | b6 682 | *** | *** | *** | *** | 43,184 |
| South Wales, & | 0. | *** | *** | *** | *** | 368,866 | *** | | | | 495,840 |
| C | | | *** | *** | *** | 1,587,000 | | *** | *** | *** | 2,452,235 |
| Y-slend | | 000 | | | | 25,525 | | *** | *** | | 128,602 |
| treland | *** | *** | *** | *** | 0.00 | 20,020 | *** | *** | *** | *** | 120,002 |
| Total | | | | | | 9 885 012 | | | | | 5 821 080 |
| | | | | | | | | | | | |

From the above figures it will be seen that there has been a decrease between the two periods from several districts, and the question is, as we before state I, whether such is the result of the exhaustion of the fields, or otherwise? It is such information, given authoritatively, that we consider would be of great value, and we see no reason why it should not be obtained by the Government as in the case of coal.

COAL MINING IN BRITISH COLUMBIA.

Some time since we noticed the journey of a correspondent of the Journal, Mr. Bushby, formerly of the Darfield Main Colliery, near Barnsley, from Cape Breton, where he was the manager of a large colliery, to British Columbia, to fill a similar position, and it now appears that coal mining there is about to be carried out extensively. The new colliery is at what is known as Bayne's Sound Settlement, a colony which had no existence nine months ago, but now gives every promise of becoming a very important one. Quadra is the name of the town, and it has all the necessary requirements for supplying not only the place itself, but the surrounding districts or settlements, as they are termed, and these include a hotel, of course, stores, blacksmiths' shops, saw-mills, engine-house, dwelling houses, &c. The colliery at the latest date was progressing rapidly, there being a large two-storied building for the use of the miners, good offices, with engineers' residence, &c. In sinking some coal was met with, whilst in driving a considerable tonnage has been placed on the pit bank. A new locomotive is on the ground, called the "Quadra," after the new town, and has commenced running. The engine will convey the coal from the colliery to a newly-created wharf capable of accommodating half-a-dozen vessels. The line of rails is about 3½ miles long, and passing along the banks of the Sobal discloses some exquisite scenery. Coal, it may be said, Is a rather scarce article in British Columbia, for at Victoria the price to consumers is something like \$10 for the English ton; it may, therefore, appears that coal mining there is about to be carried out extensively scarce afficie in British Columbia, for at victoria the price to consumers is something like \$10 for the English ton; it may, therefore, be fairly assumed that the Baynes Sound Colli-ry will be a welcome addition to the mines already at work, and be not only a benefit to the public but a profitable undertaking for the shareholders. It may be said that coal is shipped from some pits to California, so that there is plenty of room for enterprise and capital in our extreme North American passessions.

North American possessions.

In Vancouvers Island there are extensive beds of lignite and coal In Vancouvers Island there are extensive beds of lignite and coal of the tertiary and cretaceous periods, which have long been worked, not only for supplying the steamers trading between Victoria and the Frazer river but for shipment to several ports. Some of the lignite is upwards of 9 feet in thickness. The tertiary coal fields, it may be said, extend a considerable way from California to the southern end of Vancouvers Island and British Co'umbia, whilst that of the palæozoic age in Queen Charlotte's Island, off the northern coast of British Co'umbia, yields authracite. The importance of the vast coal deposits in British territory on both sides of the Rocky Mountains has been commented upon by Dr. HECTOR. the Rocky Mountains has been commented upon by Dr. HECTOR, who lays great stress on their value, showing that these offer a certain inducement towards a route to China and the East by Canada, the Saskatchewan, and British Columbia. The coal worked in Vancouvers I-land at present gives from 66:20 to 71:20 per cent. of carbon. It will be seen that there is a vast field as yet unopened for the capitalist and the miners, and it is evident that no more encouraging prospects can be found, so far as mining is concerned. for the capitalist and the miners, and it is evident that no more encouraging prospects can be found, so far as mining is concerned, than on the North Pacific Cast. We hope before long to be able to give more particulars of what is being done at the mines in that distant part of Her Majesty's dominions, and how far labour at the mines is profitable. It is more than probable, however, that there is now plenty of room for experienced miners, of which in England at the present time there is a plethora.

RAILWAY ECONOMY.

RAILWAY ECONOMY.

The leading home railway companies have profited rather materially in some cases during the last six months—that is, to be a little more precise, in the last half of 1876—from the fall in coal and iron. Thus on the London and North-Western Railway the coal and coke consumed by the locomotives and in the locomotive repairing shops cost 138,179% in the second half of 1876, as compared with 173,779% in the corresponding six months of 1875, showing a reduction under this head alone of 35,600%. The increase in the net profit realised by the London and North-Western in the second half of 1876, as compared with the second half of 1875, was 24,806%, so that if coal had remained at the price at which it stood a few months since there would have been no increase of profit at all. The maintenance and renewal of way—an item in which iron occupies a prominent place—cost the London and North-Western Railway Company 398,352% in the second half of 1876, as compared with 430,757% in the corresponding period of 1875, so that here, again, a considerable saving was realised. The experience of the Lancashire and Yorkshire Railway in the matter of coal and iron has been very similar to that acquired by its powerful neighbour, the London and North-Western. Thus coal and coke consumed in the "loco" department of the Lancashire and Yorkshire cost that company 56,636% in the second half of 1875 having the second half of 1876 have the second half of 1876 have the second half of 1876 having the second ha Thus coal and coke consumed in the "loco" department of the Lancashire and York-hire cost that company 55,536L in the second half of 1876, the corresponding outlay in the second half of 1875 having been 65,722L. In the permanent way department of the Lancashire and York-hire the reduction realised in the cost of materials employed was still more considerable, the outlay under this head in the second half of 1876 having been only 84,21 Lt, as compared with 100,206L in the second half of 1875. In the case of the Great Northern, the cost of the coal and coke consumed in the "loco" department in the second half of 1876 was 60.822L, against 70,605L in the second half of 1875. But the Great Northern, singular to rethe second half of 1875. But the Great Northern, singular to relate, did not benefit much from the cheapness of iron in its way and and works department, materials in this branch of the company's management having cost 68,728l, in the second half of 1876, against 61,003/, in the second half of 1875. The result of the direct 61,003, in the second half of 1875. The result of the direct gain which the London and North-Western and the Lancashire and Yorkshire Companies derived from the comparative cheapness of iron and coal was that the London and North-Western was enabled, in spite of the dulness of the times, to maintain its ordinary stock dividend for the second half of 1876 at the same rate as that at which the corresponding dividend stood for the second half of 1875. The Lancashire and Yorkshire was even enabled to slightly increase its ordinary stock dividend; the Great Northern, not having been equally successful in turning the reduced cost of iron to profitable account, saw, on the contrary, its ordinary stock dividend fall to 63 per cent.

The reduction in the price of iron and coal has not, however, been As to the extent of the districts where ironstone is now being worked there is no actual data to go upon, and this appears to us to be of almost as much value as the statistics furnished with respect to the areas of our various coal fields. Looking at the last

better demand for iron, and this better demand would have, no double brought higher prices in its train. Well, it would have been tell for our great railway companies to have paid a little higher price for the rails which they had to purchase if at the same time they have not had to suffer from the general collapse of credit, which has, course, involved loss of traffic.

COLLIERY EXPLOSIONS, AND WEATHER INFLUENCES. With COLLIERY EXPLOSIONS, AND WEATHER INFLUENCES.—Writton the 3rd inst. on "Colliery Management and Explosions," were tended that meteorological conditions greatly affected the safety our mines, and that "explosions in mines are far more intimate associated with, and affected by, violent disturbances, atmosphane and otherwise, than is generally supposed." We also said "their timate connection of storms and explosions are not yet sufficient understood even by some of our principal mining engages." and otherwise, than is generally supposed. We also said "theistimate connection of storms and explosions are not yet sufficient understood even by some of our principal mining engineers." Why penning these remarks we certainly had no idea that they would so soon and completely be verified by one of the most eminest scientific men in the country; but such is the case. Mr. Scott, frector of the Meteorological Office, in his evidence before the Treasy Committee, on meteorology (just printed), strongly as ets the "colliery explosions are due more often to meteorological than other causes." Recent investigations carried out by Messrs. Scott and Galloway lead to the belief that nearly 75 per cent, of colliery explosions, fatal and non-fatal all put together, are connected more less directly with meteorological causes, come 50 per cent, being connected with changes of pressure, and about 25 per cent, and are traceable to changes of temperature. It is Mr. Scott's opinion shared by Mr. Galloway, that if warnings could be communicated to the cultiery managers to say that on such and such a day they should not send the men down a great loss of property and a great number of explosions would be prevented. The difficulty of carrying this idea into effect is that in, for instance, the Glargow district the collieries extend all over the district from Cummock upto ing this idea into effect is that in, for instance, the diasgow district the collieries extend all over the district from Cummock up beyond Glasgow, and that as a signal cannot be hoisted in any or place which shall be visible everywhere, as in a harbour, the warning must be conducted by individual telegraphic communication. It must be conducted by individual telegraphic communication. It is a question of expense; and, again, there is a diffe ence of opinion among the colliery Inspectors as to the possible value of the policity but, Mr. Scott explains, "colliery Inspectors are not all very well educated men." We feel satisfied that Mr. Scott will have downweight with colliery managers, and when "storm warnings" are forwarded from the meteorological offices especially, caution will be observed in the working of our mines. observed in the working of our mines.

ELECTRIC BLASTING AND SIGNALLING IN MINES.—An interest ELECTRIC BLASTING AND SIGNALLING IN MINES.—An interesting lecture on the employment of electricity for blasting and signalling in mines was delivered at the Bristol Mining School, on Mine, evening, by Mr. W. BLANCH BRAIN, of the Drybrook Iron Mine, After briefly sketching the history of electrical discovery he mentioned his own theory that he can demonstrate that Faraday was correct in assuming a relation between gravity and electricity, although his results were negative when he attempted to prove it. But it is in horing that Mr. B ain suppears to be even more suppears. But it is in boring that Mr. B ain appears to be even more successful than in electrical research; his results are such that if they be generally obtained they will revolutionise mining and cause mining engineers to wonder. He has succeeded in bringing down 120 cubic feet of hard limestone rock with only 107 feet 11 inches of boreholes, or nearly 1½ cubic feet of rock for each foot of hole drilled. The result is to some extent due to the assistance he derived from dynamics and electric fining no doubt, we they is entitled to fine. The result is to some extent due to the assistance be derived from dynamite and electric firing no doubt, yet he is entitled to full credit for the quantity. The executive of the Bristol Mining School may be congratulated upon securing such useful lectures for their students. The lecture will be found in the Supplement to this day's Journal.

BRITISH DYNAMITE COMPANY (Limited). - We are informed that BRITISH DYNAMITE COMPANY (Limited).—We are informed that this company has transferred its patent rights and property to a new company just formed, under the designation of Nobel's Explosives Company (Limited). The alteration in the name of the company will not make any change in the directors, officials, or agents, who will transfer their services to the new concern. All the obligations of this company are undertaken and will be discharged by Nobel's Explosives (Company Christical III), parking this in the company are undertaken and will be discharged by Nobel's Explosives Company (Limited). In making this intima-tion the directors tender their thanks to the consumers of dynamite throughout the country for the liberal encouragement shown to the company during the few years it has been in existence.

JOINT-STOCK COMPANIES .- A Parliamentary Return relating to joint-stock companies in the United Kingdom, formed and registered under the Companies Act, 1862, &c., has just been issued, from which it appears that in the year 1875, 1153 companies were registered with a proposed capital of 82,447,1804, and 19 without nominal capital, making a total of 1172. From Jan. 1 to May 31, 1876, 478 companies were registered with a proposed capital of 24,056,5204, and 82 without nominal capital, making a total of 560.

MINERAL INDUSTRIES OF VICTORIA.—The reports of the Mining Surveyors and Registrars for the quarter ending Sept. 30, 1876, for copies of which we are indebted to Mr. Thos. Couchman, the acting secretary for mines, have just been receive!, and show that there were 41,990 miners employed, of whom 16,160 Europeans and 10,397 Chinese were engaged in alluvial mining, and 14,725 Europeans and 108 Chinese in quartz mining. The estimated yield of gold in 22e quarter was 86,716 ozs. 7 dwts. from alluviums, and 158,192 ozs. quarter was 86,716 ozs. 7 dwts. from alluviums, and 158,192 ozs. 12 dwts. from quartz, making a total of 244 909 ozs. It appears that 181,596 tons of wash dirt yielded 7607 ozs, of gold, or at the rate of 4.5th dwts. to the ton, and 7527 tons of cement yielded 1500 ozs. of gold, or at the rate of 4 dwts. to the ton. There were 218 miners, other than gold miners, employed; of those 10 were argentiferous galena miners. 45 tin miners, 43 copper miners, 80 antimony miners. 6 ironstone miners, 5 lignite miners, and 29 s'ate and flag miners. Mining generally appears to be in a depresse 1 condition. A lithogonies the Mining generally appears to be in a depressed condition. Althogram of the rhytidocaryon Wilkinsonii, 12 figures, accompanies the report, which is altogether a very interesting one.

COAL AND IRON IN THE UNITED STATES .- It appears from the report of the Massachusetts State Commission on Railroads that luring the past year 151 miles of steel rails have been laid in that State, making 1144 miles out of a total of 3104 miles, or 37 percent. State, making 1144 miles out of a total of 504 miles, or of per conof the whole. There is scarcely any new feature to report in connection with Scotch pig at New York. The stock has continued
small, and there has been no improvement in the demand. Stel
rails are quoted at New York at \$48 to \$50 per ton currency at the
mill, and iron rails at \$35\frac{1}{2}\$ to \$37 per ton currency. The coal trails
has ruled dull at New York, notwithstanding that a considerable
number of orders have been received from the East. Steel rails
have ruled from at Philadelphia, but there has not been nuch as bave ruled firm at Philadelphia, but there has not been much activity in the demand. The capacity of production is in excess of current requirements, and low prices maken appreciable difference. the demand. There has been little change in iron rails at Pl ladelphia; the amount of business passing is comparatively limited. There has been more doing in old rails at Philadelphia, and sales have been made at somewhat higher prices. From Pittsburgh we learn that Messrs. Anderson and Passavant have contracted to furnish 3400 tons of crucible steel for the construction of the New York and Brooklyn Bridge. At Boston the rail market has raid active. A Southern demand for iron rails is anticipated as som as confidence has been re-established.

COPPER.—Messrs. White and Haskell, of New York, have forwarded to us a table of American copper statistics for the last eight years. On Jan. 1, 1869, the stock was 4465 tons; this remained about stationary in 1870 and 1871, was reduced to half in 1872 and 1873, recovered in 1874 rose to 4900 tons in 1875, and to 5360 tons in 1876. The production was 11,607 tons in 18-9, and with the exception of 181, there has been an increase each year, that for 1875 and 1875 being 17, 380 tons. The American home consumption and export was about 11,500 tons in 1809, each year, expert 1873, showing an increase, until 1876 stands at 21,000 tons. The exports American home consumption and export was about 11.599 tons in Rese, except 1873, showing an increase, until 1876 stands at 21.000 tons. The ext 1876 were equal to those of the three preceding years combined, being 5150 tons. The price on Jan. 1 was only ½d. per fb. above the lowest price eight years. They estimate the stock on hand at New York on Jan. 1, 2125 tons; stock at Detroit, and in transit therefrom, 446 tons 9 ewts. 15 from the Lakes prior to Jane 1, about 2455 tons 7 owts. (though it is different the Lakes prior to Jane 1, about 2455 tons 7 owts. (though it is different the Lakes prior to Jane 1, about 2455 tons 7 owts. (though it is different the Lakes prior to Jane 1, about 2455 tons 7 owts. (though it is different the Lakes prior to Jane 1, about 2455 tons 7 owts. (though it is different the Lakes prior to Jane 1, about 2455 tons 7 owts.)

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The Ha eevera! In th more and Tennessee, 669 tons 13 cwts., making the total available supply to June 1 about 669954 tons. From this must be deducted the January extension of the state of the sales for export during February and March, of 558 tons 1 cwt.; the sales for export for shipment prior to June 1 about 10 tons; and the sales for export for shipment prior to June 1 about 10 tons; and the sales for export for shipment prior to June 1 about 51 cwts. making 3348144 tons, leaving an apparent available supply (excess for during the prior to during 348144 tons). The price on Jan. 1 was 19 c. per 1b.,

REPORT FROM CORNWALL.

Feb. 21.—It is some time since there was so long a period during

REPORT FROM CORNWALL.

feb. 21.—It is some time since there was so long a period during with there has been so little to report really worthy of consideration. There are, of course, always little matters of detail that might is noted, but of matters of moment the present time is almost be noted, but of matters of moment the present time is almost be noted, but of matters of moment the present time is almost be noted, but of matters of moment they were, and there will salike no change either in the general aspect of trade or the appears alike no change either in the general aspect of trade or the appears alike no change either in the general aspect of trade or the notes. The only general topic that seems to attract any attention just 70%, and that rather fitfully and spasmodically, is the propriety of now, and that rather fitfully and spasmodically, is the propriety of now, and that rather fitfully and spasmodically, is the propriety of now, and there are heart of the continuous continuous conservation is an accident of the smelting trade, not its necessary condition, and there are plenty of brokers who would undertake to dispose of the membered too that the present system of merchant smelting is emphasively a modern innovation, that originally mines smelted emphasively a modern innovation, that originally mines smelted held and handed it back to the adventurers minus the returning charges, and it was only after their system had been long in voque that the present one came in. The only practical objection that has been urged to the mines doing their own smelting and thus making their own profit of the operation has been the statement that it is necessary to mix together certain qualities of tin. This we have questioned, and it has been re-affirmed, but not as we before said, so fars appears outside the smelters' circle. It did not used to be necessary in the old time, and the quality of the metal has not so questioned, him to did not used to be far as appears outside the smelters' circle. It did not used to be far as appears in the old time, and the quality of the metal has not so changed that it should be necessary now. Is the real solution of the pecesary in the old time, and the quality of the metal has not so changed that it should be necessary now. Is the real solution of the statement this—that by a judicious admixture a better profit can be made of poorer stuff? If so, that is one thing, and the necessity of mixing quite another. It is not quite certain that ere long the excitent will not be tried. sking quite another. It is not quite certain that ele long the ex-periment will not be tried. We mentioned last week the Penryn foreshore case. Judgment is now been definitely given in favour of the corporation. It is stated, and apparently on good authority, that negociations manow in progress between the Great Western and the Cornwall

It is stated, and apparently on good authority, that negociations no now in progress between the Great Western and the Cornwall Minerals Railway Company for the acquisition by the former of the latter concern. This would be an important purchase by the Great Western, for the Cornwall Minerals lines are an important network, commanding almost the whole china clay trade of the county, and they have seriously interfered in this particular with the traffic of the Conwall line. The Liskeard and Caradon Railway Company agos its way, and this sets a good example to the other railways of the county. The dividends declared at the recent meeting were per cent, on the one-third shares, and 2½ per cent, on the original

and new 25l, shares.

A serious accident has happened at West Arton Mine, resulting in the injury of two men through using dynamits contrary to instructions. C. Carlyon and W. James were engaged in the bottom of the 130 fm. level, and after having bored a hole placed a dynamite cartinge in the bottom and some powder above, and commenced tamping the hole; whilst so engaged it exploded. Drs. Angove and Butlin were promptly in attendance, and rendered the injured men every interest. James has lost the sight of one eye, and Carlyon had a new 251. shares. sistance. James has lost the sight of one eye, and Carlyon had a humb and one finger of the left hand amputated, and was further nigared in the breast and about the face.

REPORT FROM THE NORTH OF ENGLAND.

Feb. 22.—In both the iron and the coal trade, and throughout 10st of the allied and collateral trades, there is a continuance of decession which begins to deepen into the most alarming appear-So far, indeed, as the coal trade in particular is conmees. So far, indeed, as the coal trade in particular is concerned we hear it stated on every hand that there never were such times, and that it would be impossible for the oldest hand to remember a time when the outlook was so entirely unrelieved by a single ray of hope and light. This state of matters is beginning to be severely felt both by employers and employed, and the troubles and difficulties which both alike are now experiencing tax all their adurance and resources. Loss is being incurred on according to the content of the content

and difficulties which both alike are now experiencing tax all their endurance and resources. Loss is being incurred on every hand. Some 990 to 10,000 men are employed in and around the Durham collicities. A heavy drain is being made upon the resources of the Union. Employers are generally calculating as to whether it would not pay them better to close their pits altogether. Prices are failing to show any sign of improvement, and altogether the outlook is one of the dreariest and most desponding kind.

In these circumstances steps are being taken to effect not only a further reduction of wages, but an increase of working hours as well. On this proposal conclusions are likely to be tried during the next few months between the miners and the mineowners. The former may not object to refer to arbitration a suggestion that wages shall this further be reduced, although that would imply the rest ration of the wages paid in 1871. But it is a different thing with the working hours, which have all along been regarded as settled for winking hours, which have all along been regarded as settled for good on the basis now adopted—about six and a half or seven hours from bank to bank. The adoption of longer hours by the hewers would enable them to earn more wages, and it would enable the owners to get a larger output relatively to the expenses of management, engine power, wear and tear, &c.; and in this respect there can be no doubt that it would be highly desirable. The provisions of the Mines Regulation Act would of course prepared the receivilities. can be no doubt that it would be highly desirable. The provisions of the Mines Regulation Act would of course prevent the possibility of a return to the customs of 10 years ago, the hours of boys having ben reduced permanently to 54 per week; but while it would limit the hours during which coal could be drawn, it would not materially interfere with the actual production offeoal in the pits, and arrangements could be made for meeting the difficulty as to the drawing of the coals. There seems to be a general concurrence of belief that it will take both employers and employed all their time, and the exercise of much mutual forbearance, to tide over the difficulties now pending and threatened; and it is not too much to hope that the men will be wise enough to accede to the working of longer lours, or other arrangements of a kindred kind, with the view of reducing the working cost of raising coal.

The deputies question appears to have come nearer a strike than

Reducing the working cost of raising coal.

The deputies question appears to have come nearer a strike than
lanticipated in my last letter. The return made up to a few days
\$20 showed 13,872 in favour of a strike, and only 13,212 against
the strike, and only 13,212 against
the personal voting was in favour of resorting to the
substrainment of force. But the rules of the Durham Miners' Association require a clear majority of two-thirds of the votes of the
Association before a general strike can occur, so that the actual
Result will in the present case he one of "no strike." There are

Association before a general strike can occur, so that the actual result will in the present case be one of "no strike." There are, lowever, in the Durham Miners' Association at the present time a lot of highly combustible material which the slightest accident may ignite. The men seem to have the impression that they cannot be worse than they are; and if that is true to any extent of the men, it is much more so of the owners.

The Delaval Benwell Colliery was stopped on Saturday, owing to the slackness of trade. The Dronefield Silkstone Colliery is about to be laid in until the revival of trade, or a reduction in the rate of wages, enables the owners to commence work again. At Wheatley Hill the miners have received notice to quit in a fortnight, and other 800 men and boys will thus be thrown idle. At Delaval, New-ham, and Cramlington the pits have now been closed for several weeks, and there is no present prospect of their being re-opened.

anxiously awaiting that prospect; but in the main the chances of improvement are even less hopeful now than they were some time ago. In the county of Durham the miners have determined to take from their general fund a sum of 5000L to form the nucleus of a relief fund, which they will afterwards maintain by an extra contribution of twopence per fortnight per member. Heretofore the In the county of Durham the miners have determined to take from their general fund a sum of 5000l. to form the nucleus of a relief fund, which they will afterwards maintain by an extra contribution of twopence per fortnight per member. Heretofore the Durham miners have not allowed anything to men thrown out of employment from slackness of trade, although they have made allowances to men thrown out of work by accidents to plant, &c.

The directors of Bolckow, Vaughan, and Company have decided to recommend a dividend for the year 1876 of 7½ per cent, including the interim dividend paid on October 1.

The finished iron trade is deplorably slack in every branch, except that of plate making, and even plate makers are doing less than they were. On the Tyne some 35 vessels are now being built, nine of them being at Palmer's well-known works.

A dispute is threatened at the Pegswood Colliery, in Northumberland, owing to the masters having introluced a new system of weighing the round coals to avoid the labour of weighing them in the gross, and the trouble of such arrangements at the pit head as the Welsh system requires.

Mr. Thomas Fenwick, iron and mineral merchant, Middlesborough, has presented a petition for liquidation. The failure is attributed to losses incurred by the failure of other firms.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

Feb. 22. - The slight improvement noticeable last week at a few Reb. 22.—The sight improvement noticeage has week at a lew finished ironworks is not in those instances this week maintained, since orders for high-class finished iron are more needed now than at the date of my last. In less valuable samples there are instances in which a fittle more is doing, but generally buyers hold back, whether are consumers or middlemen the formary value all reaches. in which a fittle more is doing, but generally buyers hold back, whether as consumers or middlemen, the former using up all present supplies, and the latter keeping down stocks rather than buy again whilst the market remains in its present unsettled condition. Prices of most finished iron must, therefore, be still reported as weak. Very little business is doing in pig-iron, whether in respect of Staffordshire or of foreign brands, and the quotations remain firm for Staffordshire, but with a tendency to droop for some common Laucashire qualities. Coal is not moving to any notable extent either in respect of manufacturing or of household samples. As to the latter the reduction declared by the Cannock Chase firms is pronounced to be too little to have much effect in stimulating business.

is pronounced to be too little to have much effect in stimulating business.

The local Exchanges have within the past week or nine days been a little concerned respecting a small firm known as the Regent fromworks Company. It is a limited concern, and carries on business near to Bilston. Efforts were being made to adjust matters, but they have been unsuccessful, and on Saturday next a petition for the winding up of the company will be heard before the Master of the Rolls. The petitioning creditors are Messrs. Richard and Isaac A. Thompson, engineers, &c., of Bilston. The company consists of only a few shareholders, and they are mostly local men.

Mr. J. Capper, the secretary of the operative ironworkers on the Mill and Forge Wages Board, has issued a circular to the ironworkers of South Staffordshire and East Worcestershire urging them all to associate themselves with the Wages Board, of which he speaks in high terms, saying: "In time to come we shall all have cause to rejoice and say that arbitration has proved a blessing," not only to the employers and the employed immediately concerned, but likewise to the shop keeping interest.

The Cannock and Huntington Colliery Company are calling up a further 2L per share, making 6L paid upon the 2OL shares. At present there are sellers at 2 dis. There are very few buyers in the market for any of the coal and iron shares quoted on the local Exchanges. Spon Lane Colliery 1OL shares, upon which 8L 10s. has been paid were sold on Wedgesday last at 4L each. Whilst 3L 15s is

market for any of the coat and from shares quoted on the local Exchanges. Spon Lane Colliery 10t, shares, upon which 8t, 10s, has been paid, were sold on Wednesday last at 4t, each. Whilst 3t, 15s, is offered for the 10t, Chillington Iron Company shares sellers are holding off for 4t, 5s. The Mid-Cannock Colliery shares selers are premium; the 20t, shares, 10t, paid, being offered at 13tt. John Bagnall and Sons (Limited) iron shares of 10t, are offered at 3t, 17s, 6d, without securing buyers, and so as to the Darlaston Steel and Iron Company shares which are offered at 11 15s. The Palsall Colliery.

company shares which are offered at 1l. 15s. The Pelsall Colliery shares of 20l., with 15l. paid, are in the market at 8l. discount. The South Staffordshire and East Worcestshire Institute of Mining Engineers tenth annual meeting was held on Monday in Dudley, when the presidency, vacated by Mr. Thomas Latham, fell to Mr. Thomas Parton, who had been vice-president; Mr. David Peacock became vice-president, Mr. Thos. Brettell, treasurer, and Mr. Alex. Smith, secretary. The council are—Messrs. (Thomas) Letham. Smith, secretary. The council are—Messrs. (Thomas) Lutham. Blakemore, Field, Bayley, and R. Latham.—[A full report of the proceedings appears in the Supplement to this day's Journal.]

The subsidence at the limestone pits at Dudley is a centre of attraction for numerous spectators, but the dilapidation of the dwellings has not increased upon the week.

I am unable to report any improvement in the coal and iron industries of North Stiffordshire. The supply of coal is in excess of dustries of North Stiffordshire. The supply of coal is in excess of requirement. Neither in the calcined nor the raw ore trade is the demand at all equal to capability of supply. The restricted make of pigs is being pretty much used up, though stocks are slightly increasing at some furnaces. The plate mills are very indifferently supplied, and, owing to the slackness in the export business, bars are moving only always whilst hoops experience the saverity of the

supplied, and, owing to the stackness in the export business, bars are moving only slowly, whilst hoops experience the severity of the competition of Warrington firms.

Mr. J. E. Davies, the unpire in the wages dispute in the pottery trade, has made his award in favour of the operatives, considering it inexpedient that any reduction in wages should be made, or that the contracts between employers and their men entered into last Martinmas shou'd be disturbed.

A case of considerable invoctance to the tin-pla's trade is at pre-

Martinmas shou'd be disturbed.

A case of consi lerable importance to the tin-plate trade is at present before the Vice-Chancellor, the question raised being the novelty of the decorated tin-plates made under Messrs. Flower's patents by the Neath Tin Decointing Company. The practical efficiency of Messrs. Flower's process is not doubted, but the point is whether it differs sufficiently from the ordinary Birmingham japanning process to constitute a patentable invention. It appears the Messrs. Lloyd and Son purchased the decorated plates of Messrs. Flower until a disagreement as to price occurred, and then commenced manufacture on their own account. The defendants' case will be opened on Tuesday. will be opened on Tuesday.

REPORT FROM MONMOUTHSHIRE AND SOUTH WALES.

Feb. 15.—The slight improvement noted last week as having taken place in the iron industry continues, and many of the local works present a better appearance than has been the case for some time. It is to be regretted, however, that prices for finished descriptions, and particularly rails, remain at the same low ebb. While this is and particularly rails, remain at the same low ebb. While this is the case it is too much to hope that the works now closed will be re-started. The enquiry for pigs is a little improved, and reductions are being made in stocks. For bars, however, the enquiry is limited. Clearances during the week have been rather small, and have been principally to Turkey and India. Orders are also in hand for Australia, Brazil, and China. There is no doubt that more trade will be done in the last-named country as time goes on. The aspect of the stealin the last-named country as time goes on. The aspect of the steel-works is again of an encouraging nature. For tin plates, however, works is again of an encouraging nature. For tin plates, however, prices are low; but work is proceeding with more regularity. The erection of steelworks at Rhymney is being carried on as quickly as possible. There is very little new to report with regard to the coal industry, but the demand for steam coal is well maintained, and in some instances a slight improvement in prices has been observable. In times like these one must be satisfied with the smallest crumb of

that they will submit. Messrs. Davie's Oakwood Collieries have been idle a long time, but now the men have gone to work again, the dis-pute as to wages having been amicably settled. At Tredegar Police Court Mr. J. N. James, the certificated manager

of a pit at Sirhowy, has been fined 40s. and costs for neglecting to supply the mine with adequate ventilation.

The committee who have the management of the Risca Widows' and Orphans' Fund have just met and presented their annual report.

and orphans rund have just met and presented their annual report. The fund was formed some 17 years ago at the time of the great explosion at Risca. A balance of 1558l remains in hand, and the number of recipients now is 17.

At the Monmouthshire Railway and Canal Company meeting, held at Newport to-day, dividends at the rate of 6½ per cent. per annum, and 5 per cent. per annum, for the half-year on ordinary stock and preferential stock and shares respectively, were declared.

Lord Tredegar presided.

The case of the Caerphilly Colliery Company has been before the Court of Appeal. It was an appeal by Sir Elwin Pearson against an order for winding up the company, by which he was compelled to pay 125/, to the liquidator in respect of some shares. The appeal was dismissed with costs.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

Feb. 22.—The Iron Trade of Derbyshire has undergone but little change for some time past, and, although far from being so good as could be desired, it will undoubtedly bear favourable comparison with any other district. The production of pig-iron has been well kept up, although the full number of furnaces is not in blast. A with any other district. The production of piz-iron has been well kept up, although the full number of furnaces is not in blast. A little more is being done at some of the foundries, whilst the Bessemer works at Dronfield have been doing very well. House coal has been quiet for some time past, and so also have steam qualities, whilst prices of every description are unusually low. It is this state of things that led the colliery owners some days since to give their men notice to leave, preparatory to a reduction of wages, whilst at some places the men accepted the reduction without much hesitation. It may be said that a good many of the colliers in Derbyshire are in no way connected with the Miners' Association, having leftit last year when they found that all the capital had been swallowed up in the capacious maw of the Shirland Colliery, and that there was nothing to fall back upon in the case of a strike. The Masters' Association is now a powerful organisation, backed up as it is with plenty or capital, so that it is in a position to dictate terms to the men. The concession asked by the members, it is conceded on all hands, has been particularly moderate, more so, indeed, than might have been expected from the state of trade. Of the advances made since 1871 the men up to the present time have a residue of 11½ per cent., and of this they are only asked to sacrifice 6½ per cent. In connection with the reduction a circumstance has occurred which should not go unnoticed. Mr. C. Markham, the able managing director of the Staveley Coal and Iron Company, has offered to those men who at present belong to the Miners' Union that if they will leave it he also will sever his connection with the Masters' Association. There are something like 5000 men employed by the company, who have made a model place at Staveley, and spent many thousands of pounds in promoting the educational and social wants of the workmen independent, and not the mere machines of two or three well-paid officials. I have very little doubt but what the

the reverse of numerous.

There is a little more doing in some few branches of the Sheffield There is a little more doing in some few branches of the Sheffield trades, yet business generally has still a gloomy appearance. Russia has sent in some orders for ordnance, and the armour-plate mills have been running tolerably well. The activity in some of the shipbuilding ports has led to an increase I demand for plates, whilst there is also a rather better enquiry for those for boilers. Foundry material is in fair request, but most branches of the steel trade, with the exception of Bessemer rails, are still very quiet. In South Yorkshire the coal trade is still in a depressed state, without any signs of improvement. In house coal the demand is so small that at most of the collieries the men are not working more than three or four days a week, and it is only by that means that stocks are at most of the collieries the men are not working more than three or four days a week, and it is only by that means that stocks are kept down. At nearly all the collieries notice was given at the close of last week that the men would be required to submit to a reduction of wages. At several collieries the proposal was at once agreed to, so far as 6½ per cent. was concerned, whilst Earl Fitzwilliam's men agreed to a reduction of 9 per cent. With respect to the other collieries under notice, a meeting of delegates was held at the Miners' Hall, Barnsley, on Monday, when it was agreed that the men should accept the 6½ per cent. reduction. This, it may be said, was a foregone conclusion, for no other course was open to the men.

The establishing of a Permanent Fund for the relief of the sufferers by colliery explosions in the West Riding is making very good pro-gress. Meetings have been held during the week under the presi-dency of Earl Wharncliffe, and the miners have shown every dispo-cition to contribute towards.

sition to contribute towards it.

sition to contribute towards it.

A Negligent Colliery Deputy.—At Barnsley, on Wednesday, William Brown, a deputy at the Oaks Colliery, belonging to Messre. Charles Cammell and Co. (Limited) was charged with neglecting to see that a proper number of sprags were set in a certain part of the above colliery on the 15th inst.—Thomas Briggs said he was underviewer at the Oaks Colliery. Defendant went on duty about five o'clock on the moraing in question. His work was to see that every man was carrying out the rules of the colliery, and to examine the working places. He would have to go past No. 51 bank, where a man named Patterson was at work, and ought to have examined the place. That morning about 5 tons of coal fell, nearly killing the man Patterson. There was only one sprag for 8 yards, and the rule was that one sprag be set for every 6 ft. of rouf. He spoke to defendant about that, and he admitted that there were no sprags set.—Mr. James Wilson, the manager of the colliery, said the defendant had been one of his deputies for over five years. On the morning in question, after the accident had taken place, the Inspector of Mines, Briggs, the last witness, him-elf, and the defendant visited the place, when the defendant said that when he passed through the place where Patterson was working he thought the man was going to get the coal down.—In defence the defendant said that when he passed through the place where Patterson was working he thought the man was going to get the coal down.—In defence the defendant said that when he passed through the place where Patterson was working he coal which fell, but there were two sprags onter the coal down.—The magistrues will they considered it a most serious case, and they should make an example of the defendant, hoping it would be a cution to others. Defendant was then committed to gool for two months, with hard labour.

TRADE OF THE TYNE AND WEAR.

Feb. 21.—There is little improvement in the state of any of the trades here. Collecties are still being laid off, and should any revival of consequence take place the output may be brought near the demand sooner than is expected. The mild winter has had a bad effect on the bouse coal trade, and this is, of course, the dull time of year for the steam coal trade. This, in addition to the convulsion of the steam coal trade, and this is, of the steam coal trade. year for the steam coal trade. Tais, in addition to the convuision or difficulty caused by the introduction of the new systems of weighing the coals for the payment of the men, has brought the trade into a most depressed state, but as there are no stocks on hand the works being only put on to supply actual orders, there must be a demand for this coal when the Baltic is again opened out. And as the "Billy Fairplay" difficulty will be gradually overcome, the summer business for Hartley steam coal ought to be a very fair one, unless the demand should prove bad beyond all former experience. It is extremely unfortunate that this difficulty should occur in Northumberland at the same time that the demand for manufactur-Mags, enables the owners to commence work again. At Wheatley fill the miners have received notice to quit in a fortnight, and other 800 men and boys will thus be thrown idle. At Delaval, Newsham, and Cramlington the pits have now been closed for several five says and there is no present prospect of their being re-opened. The Hartford Daisy Pit, in Northumberland, has been stopped, and there is no present prospect of their being re-opened. The Hartford Daisy Pit, in Northumberland, has been stopped, and there is no present prospect of their being re-opened. There was a stiff of the pits are being laid in.

In the Iron Trade there is nothing new to report. There was little or nothing done on Tuesday at the weekly iron market at the forest Level, Mountain Ash, the men are working out a month's notice; while at Tredegar, at the new pits, a number of men are now out of work, on the Tyne especially—that is, miners, fitters and the pits seminated at the same time that the demand for manufacturing call produced in Durham is so bad, as a large number of men some instances a slight improvement in prices has been observable. In times like these one must be satisfied with the smallest cramb of some instances a slight improvement in prices has been observable. In times like these one must be satisfied with the smallest cramb of some instances a slight improvement in prices has been observable. In times like these one must be satisfied with the smallest cramb of some instances a slight improvement in prices has been observable. In times like these one must be satisfied with the smallest cramb of some instances a slight improvement in prices has been observable. In times like these one must be satisfied with the smallest cramb of some instances a slight improvement in prices has been observable. In times like these one must be satisfied with the smallest cramb of some instances a slight improvement in prices has been observable. In times like these one must be satisfied with the smallest cramb of some instances a slight impro

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t eight nained 72 and of 1871, is. The ch year, ports of g about adjoining is doing little, one of the seams there having been stopped. Several large collieries have been stopped in the district, and the Dudley Colliery is now to be stopped. This is a large place belonging to the Cramlington Coal Company, but another pit belonging to them, which has been laid off some time, is to be re-started, and most of the Dudley men will be employed there.

The determination of the Durham coalowners to demand a further reduction of wages, and also a re-adjustment of the hours worked, has had a most crushing effect on the men, coming so soon after the late reduction and the serious quarrel respecting the denuties. The adjoining is doing little, one of the seams there having been stopped.

late reduction and the serious quarrel respecting the deputies. That they will resist both proposals may be taken as certain, and that to the utmost. It does not appear that the masters get any benefit from the reduction effected in the wages of the miners—the fact appears to be that coals are so plentiful that reduction in the cost of getting them only induces the masters to force increased sales by offering the coals at reduced prices. The average wages of the met in Durham are now below in a very development. in Durham are now below 5s, per day, and it cannot be expected that they will willingly submit to further reduction, unless the hours are increased to enable them to put out more coal, and thus earn as good wages as at present. The necessity for longer working time per day is urgently needed in hard coal collieries, but two-thirds of the Durham collieries are soft coals, and in reference to those this point has no great importance. As many c-literies have been stopped in Durham and Northumberland a large number of men are now out of employment, and payment made to those men from the funds of the Miners' Union is becoming a very serious relater. In Durham there are 2000 men out of employment at present, and in Northummberland about 3000 are in the same position. It is now proposed to form a separate fund in Durham for the support of miners out of work. The executive of the Miners' Union propose to take 50000. has no great importance. As many collieries have been stopped in from the general fund, this sum to form a nucleus of a relief fund, and that the fund be afterwards kept up by the payment of levy (extra) of 2d. per fortnight per member. It is generally said that the last straw breaks the back of the camel, and the miners' backs must be very strong if they continue to bear all the burdens put upon them.

upon them.

There is a settled conviction that trade will not improve here until matters are more settled in the East. An extensive trade has been carried on with those two great empires—Turkey and Russia—and adjoining States The exports to those parts of railway iron, bridge work, &c., have always been large, and when the Servian war broke out heavy orders were on hand for railway bridges, &c. Many of these orders had not been completed, and will be held in abey ance until a more settled state of things is assured. The Iron Trade is in a most unsettled state, and the business so limited that abeyance until a more settled state of things is assured. The from Trade is in a most unsettled state, and the business so limited that it is almost futile to give quotations. The usual figure of makers is—No. 1, 48s. 9d.; No. 3, 45s. The deficiency in the continental demand is the main cause of the depression in the market, as there are extra deliveries from Scotland. The demand for the South and inland has been flat. Founders are not so well employed as they have been of late. Plate mills are still well employed. The prices of manufactured iven are normally maltered.

have been of late. Plate mills are still well employed. The prices of manufactured iron are nominally unaltered.

Cook and Hillman have got the old works of Abbot and Co., near Gateshead, to full work, in addition to their old works near the same place, where they are well employed in making sheets. Those produced are mostly thin sheets, made by no other firm here. These sheets are similar to the sheets manufactured in Staffordshire.

The members of the Northern Institute of Mining and Mechanical Excited here employed in have an experience. The there are the stafford and the sheet are shown are proved to have an experience.

The members of the Northern Institute of aining and alectronical Engineers have arranged to have an excursion to Durham and the district next month. The Bearpark and Langley Park Collieries will be open for inspection. These new collieries are now well ad vanced, and as all modern improvements and machinery have been introduced, the trip will be highly interesting and beneficial to those members who can attend. A large number of members are expected to attend, as the Bearpark is considered a model colliery, both in reference to the machinery and arrangement at the surface. both in reference to the machinery and arrangements at the surface and underground. The excursion is to be made on Thursday, March 8. An interesting experiment has been made of a new detaching hook at the North Lottus Mines. It was witnessed by a large number of

at the North Loftus Mines. It was witnessed by a large number of gentleman and mining engineers, amongst whom were Mr. T. Lee, Eston Mines; Mr. D. H. Dixon, Brotton Mines; Mr. G. Lee, Liverton Mines; Mr. E. Hann, Brott in Hall; Mr. G. Bell, Boosbeck Mines; Mr. J. Thompson, South Skelton Mines; and several miners. Previous to starting the engine some of the spectators stationed themselves in the head gear, so that they might have a clear view of the action of the hook as it detached the rope from the cage. All being ready, the signal was given to the engineman to sturt the engine at full speed. The rope flew over the pulley, leaving the cage safely suspended by the hook to the ring fixed for that purpose. The hook was securely locked to the ring by a wedge drawn fast between the was securely locked to the ring by a wedge drawn fast between the jiws. This arrangement was considered by those present to be the sifest and best method of locking detaching hooks yet invented. The cage was then re attached to the hook, and lowered to the bottom of the pit, when the other cage was drawn up with the same result, the hook safely locking itself to the ring, to the entire satisfaction of all present. The hook, which is the invention of Messra. Hann and Ramsay, is constructed on a new design and improved principle claimed, give it a decided superiority over any detaching hooks yet ir use.

A NORTHUMBRIAN INVENTOR-THE RAILWAY BREAK SYS TEM.—The frequency of railway acci lents caused by the insufficiency of the present break system lends interest to the fact that Mr. Wil iam Huntley, of Dundee, having given his attention to this subject has complete I and placed at the disposal of the public an apparatus which promises to be perfectly adequate to secure entre and instantaneous command over a train in motion, and thus be the means of obsisting the many lamantable casualties that are occurs. means of obviating the many lamentable casualties that are occur-ing from time to time from the want of such power. Mr. Huntley has now had more than 50 years experience as a practical engineer. The "continuous grip br. ak" and the "valve regulater" he has in-The "continuous grip br ak "and the "valve regulater" he has invented prove that this long experience has borne gold fruit. The "valve regulator" gives the driver complete power over his engine, enabling him to stop its advance without reversing it, and wherever it has been adopted it is found to answer admirably. The "continuous grip break" is an invention of even more importance, and we should state that Mr. Huntley has resolved not to patent it, but to place it freely at the disposal of the railway companies, with the humane desire of doing all in his power to benefit the public by preventing accidents. A description of it, which has been published at Dundee, states that it is based on a simple principle, and is capable of being universally adopted. It has also the advantage of not interfering with the present break arrangements, and, therefore, may only be used as an auxiliary break when specially required, it being also ready for instant use. The break can be applied conbeing also ready for instant use. The break can be applied con-tinuously over the whole train by the driver from the engine by touching a lever. It can also be applied from the signal man's cabin, the train be brought to a standstill at the station. In order to do this a lever is attached to the perma nent way, and worked along with the danger signal, to the chain or rod of which it is attached. When the sign d is raised danger is indicated, and the lever at the same time brought into position Should the driver, therefore, either through fog or any other cause fail to see the signal, the breaks will be put on continuously through out the whole train without jolting, jarring, or any unpleasant vibration whatever, bringing the train up in a shorter time than any other break that has yet been to ted. It is confidently stated that by the combined use of this and the valve regulator a train could be brought to a standstill in nearly its own length. These are very important facts, and well deserve the attention of the engineering world and the general public.

EXPLOSIVES. — For the improved manufacture of explosives Messrs. Mackie, Faure, and Trench, of Faversham, propose to use various kinds of paper-making materials in lieu of cotton, &c.

into nitro-cellulose by immersion in mixed nitric and sulphuric acids, according to the known process for making guncotton, or as practiced in the manufacture of Schultze and Muschamp's powders. When the esparto or wood and other fibres are thus converted into nitro cellulose, they purify or otherwise well wash the pulp to make it pure, and mix it thoroughly with its own weight about of nitrate of baryta, and while still in a damp state they mould this mixture into compact and dense charges, which are alterwards put to dry. These charges have a central hole to receive a detonating cap when they are to be fired. In order to protect the charge against rough they are to be fired. In order to protect the charge against rough usage and moisture they cover each charge with a wrapper of paper or canvas and a coating of paraffin. The paper wrapper (if any) has a neck provided with a length of copper wire or string to fasten the capped fuse into the central hole of the charge.

PEAT COKE AND CHARCOAL.

The conversion of peat into coke or thoroughly carbonised char-The conversion of peat into coke or thoroughly carbonised charcoal in a c-usolidated state has always presented considerable difficulty, but Mr. N. D. SPARTALI, of Liverpool, claims to have discovered
a remedy. The sods or blocks of peat as they are brought from the
bog are compressed in rolls or blocks by a screw or hydraulic press,
the peat is then placed in horizontal or vertical retorts set in enclosed
fire-brick furnaces with sloping fires, so that the flames therefrom
surround the retorts. Instead of allowing the gases of the coking
peat to escape from the retort through pipes he retains them therein, peat to escape from the retort through pipes he retains them therein, and utilise them by causing them to permeate the peat itself as it is being heated in the retorts. The heat of the furnace and of the gases evolved from the peat itself in the retort is sufficient to carbonise the peat thoroughly, and to embrace therewith the tarry substance and gaseous combustible matters contained in peat. A very small pipe at the top of the retort can be provided with a valve, which may be made to open or shut and allow such little escape of aqueous vapour only as is required to prevent any accident. By making the retorts horizontal in the shape of large cylinders he can press the peat in the tubes as the mass is gradually charred by the gases and the heat of the fire. The charred mass is forced out in solid rolls of short length at the other end of the retort; or if the retorts are placed vertically he provides them with feed hoppers at the top, and a false bottom to allow the contents to be dropped from below or through a man-hole or man-hole doors at the sides of the below or through a man-hole or man-hole doors at the sides of the

At a certain stage of the charning process the fires should be drawn to prevent the peat inside the retorts from igniting, and if left for a short time to gradually cool the gas will permeate the peat completely, and then the material can be taken out. To make coke (when the charring has reached an advanced stage, but long before twhen the charring has reached an advanced stage, but long before there is any danger of ignition) he allows the charred peat to empty itself into cold water, or he uses a jet or jets of cold water, which is thrown on the charred peat when in a heap. This curbonised peat is the best material that can be used for the manufacture of best kinds of sheet or bar iron, such as Swedish iron, fire-resisting, and particularly for boilers, and this process will be the means of reducing its cost very materially. reducing its cost very materially.

MINERS' SAFETY LAMPS.

A curious methol of permitting the trimming and adjusting the wicks of miners' safety-lamps, so as to ensure thorough convenience and efficiency whilst rendering it altogether unnecessary to open the and emcleacy whist rendering it artogener unicessary to open the lamps for the purpose of trimming, was provisionally specified, but the invention has not been patented, by Mr. W. Galloway, M.E., of Carliff, the object being to avoid the inconvenience and less of time hitherto experienced from the necessity of taking lamps from the part of a mine where they are being used to safe "lamp stations" for trimming. The invention is also claimed to be advantageously applicable to any lamps whenever it is desirable to open the lattern or casing they of for trimming as far example, in the case of signal. for trimming. The invention is also claimed to be advantageously applicable to any lamps whenever it is desirable to open the lanters or casing thereof for trimming—as, for example, in the case of signal or other lamps exposed to wind. The trimming wire is fitted to slide through a hole in a ball, which is fitted into a socket provided at any suitable or convenient part of the lantern or casing of the lamp. In the Davy lamp the socket and ball may be placed at the side on a level near the top of the wick; and in the Clanny lamp the socket and ball may be placed just above the glass cylinder which encircles the flame. The inner end of the wire may be bent in any manner that may be found suitable for removing crust from or trimming the wick, and for raising and lowering it. The parts should be fittel so as whilst allowing of angular movement of the ball and wire, and sliding movement of the wire, to be practically air-tight. Another invention for miners' safety-lumps, the novelty of which it is not easy to discover from the specification, has been patented by Messrs. E. and J. Gardner, of Berners-street. The lamp appears to be a modification of the old Howden and Thresh lamp, some alteration in the construction of which was made some years since by Messrs. Hall and Cooke, of Birmingham. According to one of Messrs. Gardner's arrangements the lower portion of the lamp and the exterior cylinder is formed of metal, or of any other suitable material, and is perforated to admit currents of air, and these perforations are protected within and without this exterior cylinder by wire gauge. The air from without passes through the wire gauge.

able material, and is perforated to admit currents of air, and these perforations are protected within and without this exterior cylinder by wire gauze. The air from without passes through the wire gauze and the perforations through suitable air-ways or passages to the lower chamber of the lamp. The atmospheric air admitted in this manner through the gauze and perforated metal cylinder to the lower chamber is free to circulate through the lamp and lump burner. The top of this chamber forms the oil container of the lamp; the lamp is concentric to the outer perforated cylinder, so that there are air-ways existing between them, which air-ways lead to the lower chamber. The lamp is made so that the burner of any convenient form admitathe supply of air to the flame on its inner and outer surfaces. the supply of air to the flame on its inner and outer surfaces, and thus fully oxidises the fuel, and thereby obtains a larger and purer flame; a suitable glass chimney, if needed, is placed over the flame, the same being so fastened that it cannot fall off. A glass cylinder protected by suitable guards is mounted on the lower portion or stand of the lamp in any convenient way. The glass cylinder extends to a reservoir which forms the upper and inner portion of the lamp and is supported by suitable pulsars and supports conof the lamp, and is supported by suitable pillars and supports connected with the lower part or stand of the lamp in a way to be hereafter more fully described.

The upper reservoir and oil container is of a double cylindrical rum—that is to say, it has a tube or channel through the centre form—that is to say, it has a tube or channel through the contre thereof for the passage of the products of combustion, and the exit thereof for the passage or the cap or cover of the many of which is allowed through the cap or cover of the lamp is provided with a transverse passage or channel to allow the products of combustion to pass through the extrior to allow the products of combustion to pass through the extrior allowers and cover. The upper reservoir contains the oil to be a support of the cover automatically. It has which is supplied to the lamp and burner automatically. It has descending from the bottom thereof two or more vertical tubes, which dip into the before-mentioned lower reservoir (or lamp and ourner) to a certain distance, and through which the oil descends into the latter. The lower reservoir being close in the top en-tirely, or with a valve, a pressure is exerted upon the oil containe i tirely, or with a valve, a pressure is each of the upper reservoir, and a por-therein by that which descends from the upper reservoir, and a portion of the oil is conveyed by suitable appliances to the wick. The means of combustion and the production of illuminating power is

thereby obtained.

Sometimes they modify the arrangements by placing the reservoir or receptac'e for the oil entirely at the bottom of the lamp, the same being surrounded by concentric metal outer and perforated cylindrical casings of wire gauze, through which the external atmospheric air is admitted. The apertures provided at the lower part of the stand of the lamp being protected by wire gauze, the air is free to pass to the lower air chamber through the burner or burners, and through the wire gauze casings of the apparatus. Currents of air through the wire gause casings of the apparatus. Currents of air are admitted through a tube or tubes or channel or channels provided in the centre of the oil reservoir for the supply of the necessary means Esparto grass, or hemp, flax, stray, hay, jute, the leaves and atems of the agave, yucca, and pine apple, the fibre of the cocoa nut husk, and of the leaves of the various varieties of the palm, rags or paper pulp, and wood fibres generally are first purified by boiling with caustic alkalies, and afterwards decoloured by chlorice, as in the manufacture of paper. These materials are then to be a materials in neu of cotton, &c. In the centre of the oil reservoir for the supply of the necessary means of the necessary means of the supported by suitable supported by suitable supported by suitable supported by suitable supported by a glass chimney, if required, what ought to be done, and stated that no further accident was experience. That gentleman went down and gave his advice as to open so or holders, and is surrounded by a glass chimney, if required, what ought to be done, and stated that no further accident was experience. That gentleman went down and gave his advice as to the whole surrounded by a glass chimney, if required, what ought to be done, and stated that no further accident was experience. That gentleman went down and gave his advice as to the whole surrounded by a glass chimney, if required, what ought to be done, and stated that no further accident was experience. That gentleman went down and gave his advice as to experience. That gentleman went down and gave his advice as to the wine surrounded by a glass chimney, if required, what ought to be done, and stated that no further accident was experience. That gentleman went down and gave his advice as to the wine surrounded by a glass chimney, if required, what ought to be done, and stated that no further accident was experience. That gentleman went down and gave his advice as to the wine surrounded by a glass chimney, if required, what ought to be done, and stated that no further accident was experience. That gentleman went down and gave his advice as to the wine surrounded by a glass chimney, if required, what ought to be done, and stated that no furt

part of the lamp. The whole is surmounted by a metallic capin the

In both modifications the wicks employed may be of any convenient form or material, such as asbestos or wire, or similar to those used in ordinary lamps; air is admitted to each side or to the extention or interior portions of the wicks or wick, and any description of oil, including mineral oil, may be used, or mixtures of mineral and vegetable oils. We prefer, however to employ a mixture of camphor and mineral and vegetable oils—as, for example, equal parts of colza oil and parafiln or petroleum oil, in which has been dissolved a suitable proportion of camphor, so as to produce a solid white flame without smoke. The use of the said wicks or wick and of such oils or mixtures, is rendered possible by the before described arrangements for the supply of atmospheric air for the purposes of combustion; they do not, however, claim or consider the employment of such oils or mixtures as forming any part of or a being included in their invention. In both modifications the wicks employed may be of any con

THE RAILWAY COMMISSION.

That it is the duty of the Government to legislate for the stety and comfort of the public is a postulate all will readily grant. Public companies and private factories, workshops and collieries, railways and canals, and the whole manufacturing and commercial wor dail have to bow to imperial sway, and submit to be hedged rand about with laws, rules, and regulations professedly enacted out of respect for the safety of those employed therein, or of the publicgs nerally. We yield to none in our desire to support the Government in their laudable anxiety in this direction, provided it can be shown that the means suggested are feasible of adoption, and if that the means suggested are feasible of adoption, and if adoption would secure the end in view. For years past we have advocated and cordially supported all practical measures for the more safe working of our collieries and mines, and for stringent rules and regulations affecting our factories and workshops, where the necessity for such has been shown; but we have at the same time resisted, and still resist to the utmost of our power, that ever medding grandmotherly interference with our majing and sisted, and still resist to the utmost of our power, that ever meddling grandmotherly interference with our mining and stype industries which impedes and hampers trade without at the sme time throwing greater safeguards around those connected therewith. Whilst admitting to the greatest extent that it is the duty of the Government to legislate for the life and safety of the public, we contend that before vexatious interference with vested interests is enforced a substantial reason for such interference should be prorely and secondly that the regulations sought to be enforced as new and, secondly, that the regulations sought to be enforced are not only feasible of adoption, but would bring about the desired remedy After three years of anxious enquiry and arduous work, and examination of no less than 366 witnesses of all grades and classes. examination of no less than 300 witnesses or all grades and classes, the Royal Commissioners on Railway Accidents, appointed in June, 1874, have made their report. We pay every deference to the document, and the very able members of the Commission; but to our mind the fable of the mountain in labour and bringing forth a mouse has been exemplified over again; for while the Commissioners state that they are ununimous and decided that nelegislation is desirable which would impair the responsibility which the tion is desirated which would impair the responsionity which me law imposes upon railway companies to provide for the safety of their traffic," some of the suggestions which they make are obviously to the interests of railway directors and managers to carry out, and can safely be left to them, whilst others are not feasible, or if so would sacrifice the dividends of all lines for several years to ie—a consummation which the most zealous can scarcely expect e realised.

We are very far from infercing that accidents upon railways ar not occasionally traceable to preventable causes, and very pos-the long continuous hours which the servants have to remai duty is responsible for many sine of omission and commission, duty is r spon-15:e for many sins of omission and commission, and a lixity of duty; but railway travelling after all is by far the salest mode of transit. When we remember that during the year 1875 m less than 507,572,401 passengers were conveyed over the network of our railway system, with its complex machiney, the great worder is that far more lives are not lost, deplorable as that loss of life undoubtedly is. We recently gave statistics clearly proving that a great proportion of the lives yearly that arises from perpossions. is that far more lives are not lost, deplorable as that loss of life undoubtedly is. We recently gave statistics clearly proving that a great proportion of the lives yearly lost arises from persons own misconduct or want of caution, and in cases as constantly occur no legislative enactment in the world, nor rail way supervision however careful, will prevent. The report of the Royal Commission suggests that discretionary powers should be conferred upon the Bard of Trade to enforce the extension of sidings and stations where the accommodation is inadequate; to enforce the adoption of the block and interlocking system where necessary for the safety of the traffic; to restrict the speed of trains upon any line where high trate of speed is unsafe; and to supply all trains with sufficient break power to stop them under all circumstances within 500 yads. These and a few minor recommendations are the outcome of the three years' labour of the Royal Commissioners—recommendations which we undertake to say the various managers and directors will gladly carry out—in their own interests—when advisable and features are safely left to them. which we unlettake to say the various managers and directors will gladly carry out—in their own interests—when advisable and feasible without legislative enactments and may be safely left to them for adoption. Even the Commissioners are not unanimous in their views, several declining to sign the report upon various grounds, an evident proof either that they consider it incomplete or impracticable, or would involve such a sacrifice of railway interests as to render it impossible of adoption. We very much question, for stance, whether any break has yet been proved of sufficient power to pull up a heavy train going down a declivity with grea-y rails and sleeting rain within a distance of 500 yards, and yet the Commissioners recommend that every train should be supplied with sufficient break power to stop them "under all circumstances," a decient break power to stop them "under all circumstances," a de-sideratum much to be wished for, but which we are afraid is, at pre-sent at all events, impossible of attainment. The report of the sent at all events, impossible of attainment. The report of the Royal Commissioners is valuable as containing much information as to the causes and prevention of railway accidents, and affording an indication to railway directors where reform is needed, but the practical means of adoption are not so easily to be carried out. We may rest assured that railway managers and railway directors are fully alive to their responsibilities as to the safety and lives of their presencers, and anxious to adout every means to further setheir passengers, and anxious to adopt every means to further scure so desirable an end. Railway accidents, as every other accident, are the most expensive calamities that can possibly happen and as the law courts daily prove that railway companies are liable and the same control of the court of the cou to pay heavy compensation for injury and loss of life, it is a gua rantee that no means feasible of adoption will be spared to lessed danger. Doubtless many of the suggestions of the Royal Commis sion will be duly carried out—such as the extension of stations are sion will be duly carried out—such as the extension of stations aidings, and the providing foot-beards and foot-bridges, but the things would require such enormous outly that we can only expetite them to be done gradually. Railway interests are so intimately associated with the recommendations that we may safely leave the for adoption to the managers and directors, assured that the wel-fare and safety of the public are their first considerations, and will receive as hithert, their most anxious and careful attention.

COLLIERY ACCIDENTS.—In the House of Commons, on Monday in answer to Mr. Macdonald. Mr. Cross said it was true that eight days before the final inundation of the Home Farm Colliery, near Hamilton, in the county of Lanark, a fall in the roof had occurred in the extreme workings; that in consequence of that fall the work of a seam was stopped from the inflow of water, but the men went on working in the middle seam. The principal Inspector of this district visited the mine during the whole of the week. The Inspector was not aware of anything having occurred in the mine until the receiving of the secilett, no retire beginning them of the mine until the morning of the accident, no notice having been given to him of the water having got in eight days before. But he (Mr. Cross) was told that the persons in charge of the mine did consult the Duke of Hamilton's mineral agent, who was a gentleman of great skill and

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nat eight ery, near occurred he work he work the of the The In-ine until ine until in

ass, and he should wait until that enquiry was completed before also further steps in the matter.—On Tuesday, in answer to a question by Mr. Macdonald with reference to an explosion in the Darcy bin by Mr. Macdonald with reference to an explosion in the Darcy bin by Mr. Cross said he believed it was addressed to the account of the account of the step of the second of the step of witted that was an accumulated before the explosion occurred. In this opinion it was as much to the interest of the owners of the mine sit was to that of the public that a public enquiry should be made, it was to that of the public that a public enquiry should be made, it was to that of the course which was usual to him in such matters. It had given instructions that counsel on behalf of the Home Office would attend the inquest.

COALS

CONTRACT DEPARTMENT, ADMIRALTY, WHITEHALL, S.W.,

OTH FEBRUARY, 1817.

JENDERS WILL BE RECEIVED until Two o'clock on MEDNESDAY, the 28th February, for the SUPPLY of LAND ENGINE, WILLS, SMITHERY, COKED, BAKERY, and HOUSE (SMICH, Naval Hospitals, &c. spracks, Naval Hospitals, &c. spracks, Naval Hospitals, &c.

geometrical and the whole or any portion of the quantities required.

soles may be for the whole or any portion of the quantities required.

soles may be not bind themselves to accept the lowest or any tender, and site of the control of the power of accepting any part of a tender.

soles of tender, containing all particulars, may be obtained at this office on small application; or by letter addressed "Director of Navy Contracts, Adaptive Miller of the control of the

ALE OF IRON CUTTINGS, PUNCHINGS, & TURNINGS, AT THE ROYAL ARSENAL, WOOLWICH. WAR OFFICE, 5, NEW STREET, SPRING GARDENS, S.W., 21st FEBRUARY, 1817.

THE SECRETARY OF STATE FOR WAR IS PREPARED to BECEIVE TENDERS for the PURCHASE of such IRON CUTTINGS, CHARGE, and TURNINGS as may be for disposal during a period of three from the 1st January, 1877, at the Royal Arsenal, Woolwich, where Forms of segrand all information may be obtained, on application to the Senior Ordnance segrand all information may be obtained, on application to the Senior Ordnance segrand all information may be obtained, on application to the Senior Ordnance segrand all information may be obtained, on application to the Senior Ordnance segrand all information may be obtained, on application to the Senior Ordnance segrand all information may be obtained, on application to the Senior Ordnance segrand all information may be obtained, on application to the Senior Ordnance segrand all information may be obtained, on application to the Senior Ordnance segrand all information may be obtained.

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Jenders are to be delivered at the War Office, 5, New-street, Spring Gardens, senders are to be delivered at the War Office, 5, New-street, Spring Gardens, 27 Twelve o'clock noon, on Friday, the 2nd day of March, 1877, addressed jiredor of Army Contracts, and marked on the outside "Tender for the left of Iron Cuttings, &c. eof Iron Cuttings, &c. H. AYLMER GREENE, Director of Army Contracts.

MADRAS TRAMWAYS COMPANY (LIMITED).

IN LIQUIDATION.

IN LIQUIDATION.

In the PURCHASE of this UNDERTAKING

for the PURCHASE of this UNDERTAKING

for full particulars, apply to Mr. GEORGE BROOM, Liquidator, 53, Coleman
red, London, E.C.

THE IRON AND STEEL INSTITUTE.

ANNUAL MEETING, 1877.
PRELIMINARY ANNOUNCEMENT.

THE ANNUAL MEETING will be HELD in LONDON, commencing TUESDAY, March 20th, 1877.
OUTLINE PROGRAMME.

OUTLINE PROGRAMME.

IUESDAY, MARCH 20.—Annual Meeting for receiving Report of Council, electat officers and Members, and for routine business,
the MEDNESDAY, MARCH 21.—Inaugural Address of the President, C.W. Siemens,
to L.L.D., F.R.S., &c. Reading and discussion of papers.
IGENSDAY, MARCH 22.—Reading and discussion of papers.
Gettlemen desirous of contributing papers, or of introducing subjects for dispside, at this meeting are requested to give early notice to the undersigned.
Geing to the lamented death of Mr. Forbes, some delay will unavoidably take
the businessing the next number of the Journal, but it is expected to be published
the council are open to receive communications from the constitution of the con

ke nurse of a few weeks.

ke council are open to receive communications from non-members.

detailed programme will be issued in due course.

JNO. JONES, General Secretary.

Westminster Chambers, Victoria-street, London, S.W., Feb. 1, 1877.

BRITISH IRON TRADE ASSOCIATION. ANNUAL GENERAL MEETING, 1877.

ANNUAL GENERAL MEETING, 1877.

MIE BOARD OF MANAGEMENT hereby give notice that the FIRST ANNUAL GENERAL MEETING of the Association will be HELD (MNDON on FRIDAY, March 23rd, 1877.

Beard will present a report of the proceedings of the Association since its plantent. Various subjects bearing upon the Iron and Bicel Trades will be directly of the State of the Mndon and Steel Trades will be a red esirous of ascertaining if any member wishes to read a paper, or to get a subject for discussion at this meeting. If so, particulars should be sent align as onvenient to the Secretary.

**Association is one to consider any subject that may be of National, as dis-

aged a subject for discussion at this infecting. It is, paradials should be easily as convenient to the Secretary.

The Association is open to consider any subject that may be of National, as disguished from local, importance to the Iron Trade in its several branches.

JNO. JONES, Secretary.

Westminster Chambers, Victoria-street, London, S.W., Feb. 1, 1877.

BLACKWELL PARK RED HEMATITE IRON AND COAL MINING COMPANY, CARLISLE (LIMITED).

4 GENERAL MEETING of this company will be HeLD at their office, 26, in great-street, London, E.C., on MONDAY, March 5, at Four P.M.

By order, C. RICHARDS, Secretary. adon, 22nd February, 1877.

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| ditto | | 75 | | 2 | 7 | 6 | ditto | . 33 | 3 | 2 | |
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| ditto | ************ | 64 | | 2 | 4 | 6 | Glasgow Caradon | 75 | 4 | 8 | 0 |
| ditto | | 60 | | 6 | 9 | 0 | ditto | | 3 | 13 | |
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| ditto | ************* | | | 6 | 11 | 0 | ditto | | 3 | 1 | a. |
| ditto | ****************** | | | 7 | 5 | 0 | Hingston Down | | 2 | 5 | |
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| ditto | *************************************** | 27 | | 2 | 4 | 6 | Gawton | | 9 | 1 | 6 |
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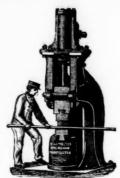
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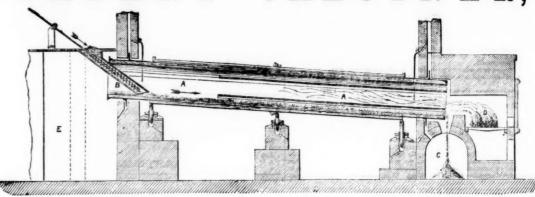
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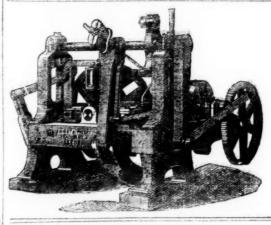
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| 10 Swansea Valley Steam Coll. Co. [L.]. 6 100 Thames Iron Company | 0 0 |
| 25 Ditto B. shares 25 | 0 0 5 3 & |
| 20 Ulverston Mining Co. [L.] | 0 0 1% 1% a |
| 10 Vancouver Coal [L.] | 0 0 par 1/2 m. 0 0 35 45 m. |
| 25 W. Cumberland I. and Steel [L.] 20 | 0 0 10 9 6 |
| 5 West Swansea Colliery Co. [L.] 5 10 Whitehaven Iron Co. [L.] 10 | 0 0 0 0 |
| 100 Wigan and Whiston Coal Co. [L.] 70 100 Wigan Coal and Iron Co. [L.] 18 | 0 0 = |
| WAGON COMPANIE | s. |
| 10 Birmingham Wagon Co. [L.] 10 20 British Wagon Co. [L.] 10 | 0 0 23 22% 0 0 234 3 pa |
| 20 British Wagon Co. [L.] 10 20 Sheffield Wagon Co. [L.] 15 10 Yorkshire Wagon Co. [L.] 10 | 0 0 3½ 3½ m. 0 0 4½ 5 m |
| TELEGRAPH COMPAN | IES. |
| "St." Anglo-American 100 | 0 0 5414 MWal |
| 20 Direct United States Cable 20 | 0 0 101/2 101/2 |
| 10 East. Exten., Australia and China 10 10 Great Northern 10 | 0 0 7 7% |
| 10 Mediterranean Extension | 0 0 3 8% |
| 8tk. Submarine 100 | 0 0 21/4 21/4 |
| 20 Western and Brazilian 20 \$1000 Western Union, 7 per cent. Mort. Bonds \$1 | 1000 109 111 |
| MISCELLANEOUS. | |
| Stk. Atlantic and Great Western Leased Lines, Rental Trust | 0 0 40 48 0 0 4 4% # |
| 25 Austral. Mort. Land and Finance [L.] 5 25 Australian Agricultural 21 10 Avoneide Engine [L.] 7 | 10 0 95 98 |
| gate Baltimore and Ohio, 6 per cent 100 | 0 0109% 110% |
| Stk. Cent. of New Jersey Con. Mort 100 Stk. Cent. Pacific of Calif., lst Mort. 6 p.c. 100 25 City of London Real Property [L.] 12 26 Copper Miners of Eng. (7 p. c. p. ef) 25 Coppier Miners of Eng. (7 p. c. p. ef) 25 | 0 01031/4 1041/4 0 0 1/4 1 # |
| Credit Politici of Engineer [22] | |
| 5 Diamond Rock Boring | 0 0 |
| 5 Gen. Phos. & Chem. Works Co. [L.] 5 | 0 0 |
| 1 Glaisdale Whinstone Quarry | 0 0 14 15 0 0 8½ 8 & |
| 1 Glaisdale Whinstone Quarry 1 17 Hudson's Bay Company 17 10 Huntington Copper and Sul. Co. 9 8tk. Illinois & St. Louis Bridge, 1st Mort. 100 8tk. Ditto, 2nd Mort. 7 per cent. 100 8tk. Illinois Cent. Sinking Fund, 5 p. cent. 100 8tk. Ditto, 6 per cent. 100 1 | 0 0 81 8 6 0 0 60 53 0 0 94 96 0 0 58 58 |
| 8tk. Ditto, 2nd Mort., 7 per cent 100 8tk. Illinois Cent. Sinking Fund, 5 p. cent. 100 8tk. Ditto, 6 per cent. 100 | 0 0 53 58 0 0 90 93 0 0101 103 |
| 7½ Imperial Credit [L.] 7 Ditto, Surplus Certificate Stk. Lehigh Val. Con. Mort., A, 6. p. cent 210 | 10 0 736 756 |
| 10 Milners Date M. | 0 0 93/4 10% |
| 25 National Discouns [13.] | 0 0 84 86 |
| * Detent Gunnowder Company | 0 0 4 1/2 |
| 8 Patent Gunpowder Company | 0 0 1/3 K pa. |
| 8 Patent Guspowder Company 9 10 Pawson and Co. [L] 6 50 Peninsular and Oriental Steam 50 Reninsular and Oriental Steam 10 10 Stk. Pennsyl. Gen. Mort. 6 p. cent., 1910 100 Stk. Ditto, Con. Sink. Fund, 6 p. ct., 1905 100 St | 0 0 4½ dis. ½ µs. 0 0 ¼ dis. ½ ps. 0 0 41 43 0 0 108 107 0 0 95½ 96½ 0 0 175 185 |
| 8 Patent Gunpowder Company 0 10 Pawson and Co. [L] 6 50 Peninsular and Oriental Bteam 50 8tk. Pennsyl. Gen. Mort. 6 p. cent., 1910. 100 1905 100 8tk. Bitto, Con. Sink. Fund, 6 p. ct., 1905 100 1905 100 8tk. Scottish Aust. Investment Company. 100 10 8tk. Ditto, 6 per cent. Preference 100 10 Silber Light (ord. sh.) 10 | 0 0 4/4 18 4 19 0 0 41 43 0 0 108 107 0 0 108 107 0 0 105 125 0 0 121 125 0 0 121 125 |
| 8 Patent Gunpowder Company 5 10 Pawson and Co. [L] 6 50 Peninaular and Oriental Steam 50 8tk. Pennsyl. Gen. Mort. 6 p. cent., 1910. 100 8tk. Ditto, Con. Sink. Fund, 6 p. ct., 1905 100 8tk. Sottish Aust. Investment Company. 100 8tk. Ditto, 6 per cent. Preference 100 10 Bilber Light (ord. sh.) 10 20 Suez Canal shares 20 12 Telegraph Construc. & Mainte. [L.]. 12 | 0 0 4½ dis. ¼ ps. 0 0 41 43 0 0 14 43 0 0 108 107 0 0 95½ 96½ 0 0 175 185 0 0 121 123 0 0 0 0 27½ 28½ 0 0 2½ 2½ |
| 8 Patent Gunpowder Company 5 10 Pawson and Co. [L] 6 50 Peninaular and Oriental Steam 50 8tk. Pennsyl. Gen. Mort. 6 p. cent., 1910. 100 8tk. Ditto, Con. Sink. Fund, 6 p. ct., 1905 100 8tk. Sottish Aust. Investment Company. 100 8tk. Ditto, 6 per cent. Preference 100 10 Bilber Light (ord. sh.) 10 20 Suez Canal shares 20 12 Telegraph Construc. & Mainte. [L.]. 12 | 0 0 4½ dis. ¼ ps. 0 0 41 43 0 0 14 43 0 0 108 107 0 0 95½ 96½ 0 0 175 185 0 0 121 123 0 0 0 0 27½ 28½ 0 0 2½ 2½ |
| 8 Patent Gunpowder Company 9 10 Pawson and Co. [L] 6 50 Peninsular and Oriental Bteam 50 8tk. Pennsyl. Gen. Mort. 6 p. cent., 1910. 100 8tk. Ditto, Con. Sink. Fund, 6 p. ct., 1905 100 8tk. Bottish Aust. Investment Company. 100 10 8tk. Bottish Aust. Investment Company. 100 10 10 Bilber Light (ord. sh.) 10 20 Suez Canal shares 20 | 0 0 4½dis. ¼ ps. 0 0 41 43 0 0 104 0 0 105 |

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